tion, the air would not strike it and would do a relatively poor job of cleaning there.

Neither did this air from the Hodge cleaner clean the ring rail (RR). It put no air at all on the ring rail.
(tr. 20) Neither did it get down on the spindle rail as shown here (X), or the guard rail that you see here (Z). Underneath the frame you have tape tension pulleys, weights (P), the under-surfaces of the bottom creel board could not be reached. The rockers (U) and the weights on the rockers. I believe that about takes care of it.

* * *

Q. Now, if lint did settle on the parts of the frame not being reached by the cleaner, what would be the effect, insofar as the work was concerned? A. First off, the spinner had to supplement with hand cleaning in that, even with the Hodge cleaner, she still had to do approximately half of the cleaning operation that she had previously performed. The Hodge cleaner was not perfect. So that where she probably ran out the thread boards once an
(tr. 21) hour—these being the thread boards along here (B)—with the Hodge cleaner she would still have to clean them once every two, three or four hours. She would pick the weight screws and weight hooks back in this area (D), instead of once a shift, once in eight hours, say, once in 24 hours. Instead of maybe wiping the tops of these creel boards once in eight hours, clean them once a week.

On the underside of the creels here—they were probably cleaned once a day, or once in a week's operation—and with the Hodge cleaner, it was still cleaned approximately that same amount. The under-surfaces of the frame here would be continued to be cleaned in the regular frequency, such as they had before the equipment was installed.

Q. If she didn't do the hand cleaning, and lint was allowed to accumulate in those places, what effect would it have? A. The effect would be to cause imperfections in the product that was being made.

Q. What are those called? A. They are commonly referred to as gouts or slubs, and are large places in the yarn. These stray fibers would get into the yarn as it was being spun and get wound into it and would be large places in the yarn which are recognized as imperfections.

The accumulations of lint, if not cleaned off, could also (tr. 22) interrupt the work in process, causing a loss in production. Sometimes sufficiently large accumulations of this stray lint could get into the work in process and cause it to break down, interrupting production and causing resultant loss until the process was started up again by the spinner.

Q. Was it generally recognized that the Hodge type cleaner did not do a complete job of automatic cleaning? A. Yes sir, it was.

Q. Were efforts made, prior to the Holtzclaw invention, to improve the quality of the cleaning that was done automatically? A. Yes sir, some efforts were made by these air outlets being made adjustable so that they could be adjusted inward or outward, trying to direct air inwardly somewhat, or as much as they could. Also, on the Walker type cleaner, some vanes were designed and installed inside of the outlets here.

* * *

(tr. 23) Q. What was this cleaner casing made out of? A. The cleaner casing in the Walker cleaner and also in the Hodge cleaner was made of sheet metal.

Q. And where was the bottom of the air outlet with relation to head height? A. It was the customary practice to install this equipment above head height for safety purposes. The mills are very conscious of safety and did not like anything that would endanger the safety of their employees; therefore, it was the custom to keep these at about six feet three inches above the floor, as a rule.

(tr. 24) Q. You say that cleaner travels along a track? A. Yes, this one travels along a track as shown in the photograph, and as it travels along this track, it must turn—you see here a 180 degree turn—it would pass over the floor here and in between the frames, there were alleys as in the case here, alleys running crossways between the frames—and the workers would pass through these alleys up and down the aisles here and across this way, so that they came under the machine, and there was danger of the machine hitting them if they were too low.

THE COURT: That would be the reason for its height?

THE WITNESS: Yes sir.

* * *

(tr. 25) MR. GRIER: If your Honor will refer to the photograph which we have marked 14, plaintiff's Exhibit No. 14.

THE COURT: All right.

Q. Mr. Grainger, will you refer to that exhibit, and will you by reference to it explain how it cleans those portions (tr. 26) of the spinning frame which you have described as not being cleaned by the earlier cleaners? A. Yes sir. This photograph shows the later model, utilizing this flexible material in the form of sleeves and cuffs to pipe the air

down the side of the spinning frame and to blow it inwardly and transversely onto the surfaces and parts of the spinning frame to improve the cleaning over the Hodge cleaner.

Here we have a short, flexible extension that directs the air almost transversely beneath the top creel board, as shown here, and gets the air into areas previously not reached by the Hodge cleaner. I may say too that this is the sheet metal housing up here and here's the motor unit, and the fan is on the top.

Here's a longer flexible sleeve here that is directing air underneath the bottom surfaces of the middle creel board in the spinning frame and cleaning the roving underneath the inner portions of the creel there that heretofore were not reached, and also the bottom surfaces of the board that were not reached by the Hodge Cleaner.

THE COURT: That looks like a pretty good trick. That covers about all of it, does it not? Cleans out all the processes in the manufacture . . .

THE WITNESS: Well, sir, with the exception that you have a long sleeve here that directs air into the under part (tr. 27) of the frame and into the roll beam area and the weight hook area and weight screw area under here, and does a job of cleaning in areas that were not reached at all by the Hodge cleaner and also a much better job than was done by the Hodge cleaner.

This long sleeve has a round opening directing air under the rolls and the roll beam into the weight hook area onto the traversing thread boards. There is a large opening here that blows directly through the bobbins here and into the under-frame area, cleaning the weights, the tape tension

pulleys, the under part of the bottom creel board, which is in here, blowing air onto the samsons and cleaning those; and on the round-bottom part of the sleeve there is a small outlet, directing air even further down between the lower surfaces of the frame.

* * *

(tr. 28) Q. Go ahead. A. This cleaner is quite an improvement of the Hodge cleaner in that it has reduced cleaning under these creel boards and on the roving tapers here and this creel board here to, from once a week, to a matter of weeks. It is directing air in the weight hook area, in the weight screw area, where cleaning was commonly done once in 24 hours, to once or twice in 120 hours of operation.

Running out the thread boards, which we see here—and I have referred to as traversing; they can either be stationary or traversing; most of them are traversing now adays—from doing that once in two or three hours with the Hodge cleaner to once in eight hours, or only once in 24 hours. And brushing off the spindle rail down here in this area, which wasn't reached at all by the Hodge cleaner before, from once every two or three hours to once in eight hours or once in 24 hours.

Cleaning underneath the frame, the tape tension pulleys, the weights, the bottom creel boards there, in this area back under here, the weights, on the rocker arms and the rockers themselves, from once a shift and once a day to once in several weeks. Sometimes a month.

Those are areas that would previously, with the Hodge cleaner, be cleaned—spindle rails in this area, every few hours; the under part of the frame, the weights, the tape

(tr. 29) tension pulleys, around this portion here, daily, or once a week. And with this type of cleaner, it's every several weeks or several months and upon different conditions.

MR. GRIER: Judge, I would like to direct the next series of questions to the elements of Claim 6 that are shown on the sheet we handed you (attached to Plaintiff's Exhibit 12).

Q. Mr. Grainger, will you point on Plaintiff's Exhibit 14 to the trackway? A. This is the track here.

Q. Will you point to the carriage? A. This is the carriage here. The wheels are in under.

Q. Will you point to where the fan is? A. The fan is in this portion up here.

Q. And the motor? A. This is the motor here.

Q. And the fan casings? A. This is the top part of the air distributor for this whole part we refer to as the casings.

Q. State whether or not the outlet conduits are rigid above head height. A. Yes sir.

Q. And the cuffs that are shown there; will you state whether or not they are highly flexible material? A. Yes sir. These parts that you see, the dark parts here, here, (tr. 30) here and here, and a similar set on the other side.

THE COURT: That is a kind of rubber material, or plastic?

THE WITNESS: Yes sir. Rubberized fabric material.

Q. Do those cuffs extend toward the machine? A. Yes

sir, they do. They extend down toward the machine and direct the air . . .

Q. In operation, do they direct the air against the machine? A. Yes sir, they do direct the air against the machine.

Q. If they should come in contact with someone as they travel about, are they of such flexibility that they will yield? A. Yes sir, they will yield and pull out and drag over the operator or box or whatever it makes contact with, and then, being of a stable-type material, will resume their shape.

Q. How fast does this cleaner travel on the track? A. That unit travels approximately one hundred feet per minute.

THE COURT: Just as an inquiry and more or less as a better understanding of that machine: Does it continuously travel, or travel one hundred feet or such length as (tr. 31) the track may be and stop, or does it go around and go somewhere else?

THE WITNESS: Your Honor, the machine may operate on a continuing closed loop of track, or the track arrangement may be other than a closed arrangement. It may have a 180 degree bend in it.

THE COURT: I see there is a bend all right.

Q. If you will refer to Plaintiff's Exhibit 4 and explain briefly how it operates? A. This is the Holtzclaw cleaner, as was this one, using the flexible extensions to bring the air down in this—with this outlet here—to better direct it under the top creel board and to clean the areas in here that were not previously reached.

This outlet here is directed at the bottom roller to better clean it.

These two outlets, as well as this one—This one directs the air down—these outlets contain dampers with which the force and velocity of air could be reduced if need be, because in this area the work in process could not stand much force of air hitting on it. It is soft, tender, easily broken, frayed or tangled; therefore, in these areas it was necessary to use much less force of air for the purpose of cleaning than in this area here, and the air coming from this long sleeve was directed onto the thread board, the roll beams, (tr. 32) the ring rails, the thread guides and the spindle rail, and on down on the side of the frame. In that area in which this air was directed it was possible to use a much greater force of air, as it would not be detrimental to the work in progress.

THE COURT: How would they decrease the volume of the air?

THE WITNESS: Dampers were located in these sheet metal portions of these outlets here.

THE COURT: That is to minimize the force?

THE WITNESS: Yes sir. It would reduce the velocity and minimize the force of the air going to these areas.

THE COURT: That is a rigid damper, is it?

THE WITNESS: Yes sir, it's a rigid damper, something like the old stove-pipe damper. You set it by hand and then secure its position.

* * *

Q. Going back to Exhibit 14 a minute, will you indicate

the relative velocity of the air that is put out by those various outlets? A. The outlet here blowing into the (tr. 33) under-creel areas has a velocity of approximately 300 feet per minute. This outlet here has a velocity of approximately 1500 feet per minute. It is possible to blow much stronger when you are blowing vertically than from these outlets, because the air is going in the direction this tender roving is going and doesn't blow on it near as much as when you are blowing straight into it.

* * *

Q. Why is it that the roving can't take as much blast as the yarn down below? A. The roving is weak and tender. We have here a package of roving. This is a very good example of it as you can see it here. And it is very tender; it has no strength in it other than just enough to enable it to be pulled by the rolls. So it can be drafted . . .

THE COURT: The balance of cotton and the balance . . .

(tr. 34) THE WITNESS: This is a spun yarn down to this point. This is spun into this.

THE COURT: That is right. Through several processes, however, I imagine.

THE WITNESS: Yes sir, there are several processes ahead of the cotton or the fiber getting into this shape. So this roving is pulled down, as you can see, off of this package here which is in the creel. It unwinds very slowly and passes down and into the roll area, and it is rather loose in there. The strand is. It is weak, and it is easily blown about and shaken up and can be tangled and frayed; and if you blow on it hard enough, it can be blown in two; so the air in these outlets, or from these outlets here, has

to be adjusted to just what the roving will stand. But down in this area, we blow full force. This will blow full force, and little distinction, if any, is made as to whether it is a fine yarn or a coarse yarn.

* * *

(tr. 35) Q. Referring now to Plaintiff's Exhibit 15, will you explain how it operates? * * * A. This photograph illustrates the Holtzclaw flexible sleeve, added to the Hodge cleaner, the air being directed downward from one of the outlets of the Hodge cleaner on either side, and from the Holtzclaw sleeve inward under the under-surfaces of this (tr. 36) top creel board, to reach areas heretofore not cleaned effectively.

Q. Referring now to Plaintiff's Exhibit 19, have you seen in various mills which you have visited a traveling cleaner with flexible cuffs manufactured by The American Monorail Company? A. Yes, I have.

Q. Have you seen one that was similar to the photograph indicated by Plaintiff's Exhibit 19? A. Yes sir, I have seen cleaners like that.

Q. Will you state where you have seen a cleaner such as is illustrated by Plaintiff's Exhibit 19? A. I have seen cleaners as shown here in the Piedmont Manufacturing Company, of Piedmont, South Carolina; The Pacolet Manufacturing Company, of New Holland, Georgia; and the Pacolet Manufacturing Company in Gainesville, Georgia.

Q. By reference to that photograph, will you indicate the trackway? A. This is the trackway along here.

Q. Will you indicate the carriage? A. This is the car-

riage along here, the wheels on which the unit operates.

Q. Will you indicate where the fan or fans are? A. There is one fan in this position enclosed by the sheet metal housing. There is one in this position, likewise enclosed, (tr. 37) and there is one here directing currents of air towards the overhead surfaces that is not enclosed. You can see the fan there.

Q. Does that mechanism have a motor for the purpose of rotating the fan? A. Yes, it does. There is a motor here for rotating this fan; there is another motor in this unit for rotating the fan therein; and there is a motor for rotating this fan.

Q. Is there a motor for propelling it along the track? A. Yes sir, there is a separate motor in this location here for propelling it along the track.

THE COURT: This is what you say infringes your patent; is that right?

MR. GRIER: Yes sir.

Q. Are those fans enclosed in casings? A. Yes sir. Two of them are enclosed in casings. This is sheet metal here. This is all sheet metal here. This has a ring around it.

Q. Do the rigid portions of the air outlets terminate above head height in that illustration? A. Yes sir, they do terminate above head height.

Q. Is the cuff that appears in that illustration of flexible material? A. Yes sir.

Q. Was it a flexible material in the ones that you saw? (tr. 38) A. Yes sir.

Q. Did the flexible cuffs extend toward the machines? A. Yes sir.

Q. Was it in operation? Did it direct air against the machines? A. Yes sir.

Q. Will you explain where the outlets are located in the flexible cuff, and indicate the portions of the machine which they cleaned? A. The outlets do not show very well on this photograph, but there is one air outlet, a round outlet similar to the round one in the Holtzclaw cleaner, directing air into the roll beam and the weight area. There is an oblong outlet along about here, directing air under the frame and through the spindles and onto the ring rail here, and then a small outlet down toward the bottom that directs air further down. This spindle rail area along here, and on underneath the frame.

Q. How does the location of those outlets compare with the location of the outlets in the Parks-Cramer model illustrated by its Exhibit 14? A. The outlets which I have seen in this long sleeve here are almost identical in their position and very similar in their size, design, in being round and some oblong.

(tr. 39) Q. In the defendant's product, which you have stated you have seen, is the flexible cuff of such construction that it will yield if it comes in contact with an operator or other obstruction? A. Yes sir, it is flexible and will yield.

Q. When did you first see one of the defendant's products in a mill? A. Some time during 1955.

Q. You never saw one before that time? A. No sir, I don't remember seeing one before that time.

* * *

(tr. 42) Q. Referring to Plaintiff's Exhibit 20, will you state whether or not that represents an illustration of the defendant's flexible cleaner, such as you state you have seen in the mills? A. Yes sir, it does.

THE COURT: (To the witness): That is the one you saw in the Piedmont Mill and the Pacolet Mills and the one at Gainesville, Georgia?

THE WITNESS: Yes sir.

* * *

(tr. 44) CROSS EXAMINATION BY MR. WATTS:

* * *

(tr. 46) Q. All spinners are girls, are they not? A. Usually you do find them girls. Largely they are girls.

* * *

(tr. 48) Q. So that you have that cover over the under part of the frame—call it greenboard or whatever you want to—and then above that you have a creel board; and above that creel board, a top creel board. Is that correct? A. Well, you have your bottom creel, your middle creel board, and your top creel board.

Q. And the bottom creel board, as you call it, is the one that covers the under frame? A. It does not completely cover it. It's one of the component parts of it.

Q. Yes. Now, you say that the Hodge machine did not do a good cleaning job on the creel part of the machine, particularly under the creel boards. Is that right? A. Yes sir.

* * *

Q. In other words, the fan housing or casing of the Hodge machine was relatively narrow, and the conduits, (tr. 49) or the metal paths for the air to go were only a little bit wider than the creel, so you couldn't direct the air inwardly under the creel boards of that apparatus. Is that correct? A. Not exactly. The Hodge cleaner could be opened up quite a ways, much wider than a creel board, but not out enough, and neither could it be brought down enough, because the top creel board, as a rule, was below the head height.

Q. You say it could be opened up enough? A. Well, spread out by adjustments on the side.

Q. How would you do that? A. By the adjustments on the side. Here is one here and here and here. And this whole leg from here down might be moved out a few inches on either side.

Q. At the lower ends of those outlets, those rigid outlets which you say can be adjusted, there were rigid nozzles, were there not? A. Yes sir. These are sheet metal nozzles here, or outlets.

Q. And they were pivoted to those downward extending legs, were they? A. Yes sir, they were pivoted to the legs here.

Q. Those outlet conduits. You say that even though you spread the outlet conduits apart and pivoted the rigid nozzles, you couldn't get the air to strike all the parts of the creel? A. That is correct.

(tr. 50) Q. About how much of the creel was in the direct path of air streams from those rigid nozzles of the Hodge device? A. May I get you another photograph that may show it more clearly here?

Q. Oh, surely. A. This shows the Hodge cleaner here.

Q. And you are referring to Exhibit 1? A. Yes sir. It has a "1" in the corner, if that is correct.

Q. Yes. That's Exhibit 1. A. The air, as you can see here—this outlet terminated at a point quite a ways above the creel there. Sometimes 10, 12. 14, 16, 18 inches, depending upon the particular installation. And the outlet, while it could be moved away from this creel board and adjusted inward somewhat to put some angle on the air, it wasn't possible to get a sufficient amount there under here to do an effective job of cleaning or go under here. And of course, none would go below the bottom creel board and greenboard and roving.

Q. And when you adjusted the outlets outwardly, you could get some air between the two creelboards, couldn't you? A. Yes sir.

Q. And some of the places between the two creel boards would be in the direct line of that air stream? A. The top of this middle creel board would get some air. The outer (tr. 51) couple of inches of it would probably get some air onto it; and it was also possible to direct air in enough to get some on the top creel board. But since roving was stored up there and because of its tender nature, you couldn't use much up there.

* * *

Q. That is the cap of the . . . A. The top taper of the roving bobbin. However, you had some that were completely covered. Sometimes you would have two lines of roving in the creels, and sometimes you had four. And when you had four, some of these, your creel board would extend out to this point, and you could get some air to

come down this way and touch here, but then you would have additional roving bobbins sitting over here and here that would be completely under the board, and as the air came down by the board like this, it couldn't get under there. It was coming in a straight line.

* * *

(tr. 68) Q. Can you tell from looking at Exhibit 15 whether or not the apparatus shown there has been in commercial operation? A. Yes sir, I would say that this equipment, as shown here, has been in commercial operation.

Q. How long were these flexible cuffs 19 of Exhibit 15? A. They were made in several different lengths, I believe, and for the particular needs, depending upon how high the outlet was above the top of the creel board here.

* * *

(tr. 87) THE COURT: No. 14 is just about a finished product. I mean by that, that these nozzles or outlets through which the air goes will just about clean every part of the spinning frame, will they not?

THE WITNESS: Yes sir.

THE COURT: Up here, of course, blows it down from the top, and this one picks it up from the base of the first creel board?

(tr. 88) THE WITNESS: Yes sir.

THE COURT: And this one gets the bottom of the second creel board and the top of it too in one operation, does it not? That air coming through there?

THE WITNESS: Its primary purpose is to get the under side.

THE COURT: It could get the bottom side too. And this air coming through picks up all of it and blows it all out as it goes along. Is that right?

THE WITNESS: At frequent intervals as it travels around the track.

* * *

(tr. 90) Q. Have you obtained orders for spinning frame cleaners during 1955 and subsequent to the time that the defendant brought out its trailer cleaner? A. Yes, I have (tr. 91) obtained orders for spinning cleaners in 1955.

Q. And in competition with the defendant? A. Yes sir.

Q. About how many? A. Oh, I don't have an exact count. I would say the contract type installations of any size probably numbered in the neighborhood of fifty or so.

Q. Roughly, what would that amount of business aggregate in dollars? A. A little over a million dollars.

* * *

(tr. 96) *RE-DIRECT EXAMINATION BY MR. GRIER:*

* * *

(tr. 98) Q. This is Plaintiff's Exhibit 7, and I will ask you to examine that and identify it, please sir. A. This is a photograph of a loom cleaner, traveling loom cleaner. This is your track here, and two units are used—here and here. The motors are here and here. From the outlets, the outlets from this one being the—the major outlets being this one and this one—you have long flexible extensions to better

direct the air and to deliver the air into the hard to clean areas with greater cleaning efficiency.

* * *

THE COURT: What is the purpose of that, now? It does not bear any relation to this suit in controversy, does it?

MR. GRIER: Yes sir, it's another embodiment. You will recall I said at the outset that these cleaners were most used in the spinning room, but were also used in other (tr. 99) phases of the mill process. The exhibits we are going to introduce now have to do with those other phases of the textile process, and this is one used in the weave room.

Q. (By Mr. Grier) Mr. Grainger, you might just explain why it is necessary over the loom here to clean in that fashion. A. Quite a bit of this hair-like fibre, as we have discussed before, is generated in the weaving process, and it gets out of the yarn and flies around and also settles on the textile machines and the loom that is shown here; and it is necessary to clean it off to assure quality of product and continued operation, uninterrupted production, so you will not have a loss of production. These long sleeves are delivering the air, piping it down closer to the difficult areas to clean in the drop wires, which is a part of the loom shown along here and here, and into the harness, this area here—they are delivering the air into those particular areas with a greater force than if they were discharged up here at some point above head height where it would disperse by the time it got down into these areas.

* * *

(tr. 106) RE-CROSS EXAMINATION BY MR. WATTS:

* * *

(tr. 117) MR. GRIER: Mr. Watts, we asked you to produce for us a photograph of your loom cleaner. Do you have it?

MR. WATTS: No. I asked the people about it, and they haven't any photographs of it.

FURTHER DIRECT EXAMINATION BY MR. GRIER:

Q. Mr. Grainger, have you ever seen in a mill a loom cleaner with flexible cuffs manufactured by the American Monorail Company? A. Yes sir.

Q. Where did you see it? A. Monarch Mills, Union, South Carolina.

Q. How could you tell it was manufactured by the American Monorail Company? A. It was characteristic of their design and had the name plate on it.

Q. Will you state whether or not it made use of a track-
(tr. 118) way? A. Yes sir, it did make use of a trackway.

Q. A carriage? A. It used a carriage. It was a different design from this as shown in the photograph here.

Q. Was there a mechanism for moving it along the trackway? A. Yes, sir, there was a mechanism.

Q. Did it involve the use of a fan? A. Yes sir.

Q. A motor for propelling it? A. Yes sir.

Q. A fan casing? A. Yes sir.

Q. Did it have outlet conduits which were rigid above head height? A. Yes sir.

Q. Did it have flexible cuffs? A. Yes sir.

Q. Did they extend toward the looms? A. Yes sir.

Q. Did they direct air against the looms? A. Yes sir.

Q. Were they of such construction as to yield upon im-
(tr. 119) pingement? A. Yes sir.

* * *

(dp. 3*) DEPOSITION OF G. B. HOLTZCLAW

(Defendant's Exhibit V)

MR. G. B. HOLTZCLAW, being first duly sworn, deposes and says:

DIRECT EXAMINATION BY MR. WATTS:

* * *

(dp. 9) Q45. Isn't it a fact that in the machine of the Hodge patent you could adjust the nozzle outlets? A. Not to clean underneath the creel boards or surfaces not in line with the air stream.

Q46. But you could adjust them? A. Not to clean under the creel board.

* * *

(dp. 10) Q51. It appears to me from this drawing, air from this nozzle on either side of the blower would strike the roving under the top creel board. Is that correct? A. No sir, unless you can curve it.

---

*PRINTER'S NOTE "(dp.—)" is in reference to the Deposition page number.

(dp. 12) Q62. How much more space do you think was cleaned with your nozzle than was cleaned with the nozzle of the Hodge patent, Exhibit No. 2? A. That, Mr. Watts, is hard to say because with the modern spinning frames being made these days, there is quite a bit more space. The top creel boards are as big as this table.

* * *

(dp. 13) Q69. You didn't get any more or better cleaning from the outer edge of the spinning frame over into line with the edges of the creel boards, did you? In other words, Hodge cleaned these roll stands and the pigtails on both sides of the frame quite as well as your machine cleaned them, didn't it? A. No.

Q70. You claim yours cleaned a little better? A. Yes sir, we clean all the surfaces now.

(dp. 14) Q71. He cleaned only part of it? A. That is right.

* * *

(dp. 18) Q100. That's the only kind of cuff you showed in patent and that's the only one described. Is that the only one you had in mind at the time you filed application? A. No sir.

Q101. Why didn't you describe or disclose the others? Was it because you thought the one disclosed was better (dp.19) than those you didn't disclose? A. Well, I knew at the time of my experimental work with this cuff, that if it worked I could cover the whole side of the frame with flexible cuffs.

Q102. You couldn't do that with the cuffs you disclosed?

The only thing you could do was clean between the two creel boards? A. I wouldn't say that.

Q103. Where else did you clean? Where else with the cuff except between the two creel boards? A. I think this explains that every surface is to be cleaned by use of the cuffs.

(dp. 1) DEPOSITION OF ROBERT H. BROWN

(Defendant's Exhibit U)

ROBERT H. BROWN, being first duly sworn, deposes and says:

DIRECT EXAMINATION BY MR. WATTS

* * *

Q3. What is your present position with the Company A. My title is Assistant to General Manager of Parks-Cramer Company.

* * *

(dp. 2) Q11. How long have you been employed with the Company? A. Since 1920.

* * *

Q14. What is your educational background? A. It is given in the affidavit. If you want me to repeat it I will.

Q15. Will you please? A. Massachusetts Institute of Technology. Other schools prior to that.

* * *

(dp. 4) Q24. How long have you been familiar with the art of cleaning spinning frames? A. In the rough— in an approximate way since Parks-Cramer Company went into the cleaning business.

* * *

(dp. 5) Q29. Do you agree with me and the witness this morning that the Walker patent No. 1781142 was the first spinning frame cleaner patent in the art? A. Yes, sir. That is June 3, 1925. I remember the filing date.

* * *

Q32. At least the Walker patent stands at the head of the line followed by Parks-Cramer and American Mono-Rail? A. Yes, sir.

* * *

(dp. 6) Q38. As one now in charge of the Patent Department, do you know that the license was granted to American MonoRail Company in 1936? A. I believe that was the year.

Q39. As you just testified, it ran until the more important patents expired? A. Yes, sir.

Q40. Is it also your information that American Mono-Rail paid royalties to Parks-Cramer? A. Yes.

(dp. 7) Q41. The royalties were substantial? A. Yes, sir.

* * *

(dp. 15) Q91. So far as the showing of the two patents were concerned, it was a matter of degree? A. Yes, just a matter of degree.

* * *

To: Mrs. Edna Ferster, Public Stenographer:

I, ROBERT H. BROWN, the witness whose testimony was taken before you on deposition on May 31, 1955, desire, as authorized by Rule 30 (e) of the Federal Rules of Civil Procedure, to make the following change in the Testimony as transcribed:

In Question 91, I desire to substitute the word "drawings" for "showing."

My reasons for requesting such change are that I do not remember having given any such answer as is recorded in Answer 91 to any such question as is recorded in Question 91; that I believe that the question was incorrectly transcribed; that the words "showing" and "drawings" sound very much alike and are apt to be confused by the stenographer; that Questions 89 and 90 and the answers thereto relate to the Hodge and Holtzclaw patents and indicate that my opinion was and is that the difference between the two patents is more than a matter of degree; that I had been present during the taking of the deposition of Mr. Holtzclaw earlier on the same day and had listened to the exchange which took place between Mr. Watts and Mr. Holtzclaw in connection with the drawings in the Hodge patent (as exemplified by Question 51 of the deposition of Mr. Holtzclaw); that I understood Mr. Watts' Question 91 to relate to the drawings of the patents; that this would have been a logical follow-up question to Question 90; that, unless the word "drawings" is substituted for the word "showing" or unless the word "showing" is understood as being used in the sense of "drawings," the answers to Questions 90 and 91 are inconsistent with each other; that, unless such

substitution is made or such word so understood, the answer to Question 91 is also inconsistent with the answers to Questions 130 through 133; and that the above substitution would reflect my actual opinion in the matter.

This 31st day of August, 1955.

S/ Robert H. Brown

Robert H. Brown

* * *

(dp. 18) Q108. That was merely a desire shall we say. You wanted something to yield when it hit an obstruction but didn't have at that time either material or thickness of (dp. 19) material? A. I am sure they did because they had been considering this idea quite a while.

* * *

(dp. 23) Q127. Do you claim that the Holtzclaw device gives any new result as compared with the prior art? A. Yes, sir.

(dp. 24) Q128. What is that new result? A. It brings air down closer to surfaces to be cleaned. It directs the air toward the surfaces to be cleaned and it does it with flexible material which is safe to the operators. It is a combined function.

* * *

Q130. What I was getting at in any event was the difference in degree. More places are kept free of lint with the patent apparatus than with the Hodge device? A. It is

more than a matter of degree because the old cleaner had no effect in the underframe.

Q131. That is not disclosed? A. Not specifically.

Q132. So far as everything disclosed is concerned, it is merely a difference in degree between the Holtzclaw and Hodge patent? A. Well, I don't know exactly what you mean by matter of degree. There are some points under here that might not be cleaned at all by the Hodge patent that would be cleaned by the Holtzclaw.

(dp. 25) Q133. But primarily you could remove lint from more places with the Holtzclaw than with the other? A. More, and more thoroughly. More places and each place that is reached is capable of being reached for more thorough cleaning.

* * *

ROY H. TODD,

(tr. 127) called as a witness by and on behalf of the Plaintiff, being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION BY MR. GRIER:

* * *

(tr. 128) Q. Are you employed by the Parks-Cramer Company? A. Yes sir.

Q. In what capacity? A. Charlotte Manager.

Q. How long have you been employed by Parks-Cramer Company? A. 37 years.

* * *

Q. What percentage of the production of the traveling

cleaners which you produced last year were the flexible cuff type? A. Approximately 96 percent.

* * *

Q. Do you know how many mills these were installed (tr. 129) in? A. Oh, yes. About 155.

Q. And how many of these cleaners were installed in those mills? A. Around 1395, I believe it is.

MR. WATTS: 13 what?

MR. GRIER: 1395. 1395 units.

Q. Do you know approximately what the gross sales price of these flexible units sold by your company last year? A. What we sold last year?

Q. Yes sir. A. About three and a half million.

Q. Are you able to estimate how much was saved to the mill customers in reduced direct labor costs as the result of the installation of these flexible cuff . . . A. Well, we estimate about a million and a half dollars a year.

Q. Do you know approximately how many spindles were covered by the flexible cuffs which were installed? A. Yes. About three and a third million.

Q. What percentage, if you know, of all the spindles that are in use in the United States at the present time does that comprise? A. Well, I would say around twenty-two million, I suppose.

Q. The total number? A. Yes.
(tr. 130) Q. And of that number . . . A. We are about one-seventh of them.

Q. About one-seventh of them last year? A. That's right.

* * *

(tr. 134) LESTER WHITENER,
called as a witness by and on behalf of the Plaintiff, being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION BY MR. GRIER:

* * *

Q. With what company are you employed? A. A. M. Smyre Manufacturing Company.

* * *

Q. What is the business of your company? A. We manufacture cotton and rayon yarn.

Q. And you have one or more plants in Gastonia? A. Have three plants.

Q. And your position is what, sir? A. Superintendent.

* * *

(tr. 135) Q. Do you have in your mill cleaners that are similar in appearance with Plaintiff's Exhibits Nos. 14 and 16 as indicated by this cleaner? A. Yes, we have similar equipment.

Q. Do you have with you information which you have compiled as the result of your observation of the operation of this equipment, comparing the amount of hand cleaning that is required, using these two types of equipment? A. The newer type opposed to that type.

Q. Would you identify the newer type as being the Holtzclaw? A. Yes sir, the long cuff . . . Holtzclaw.

Q. Yes. A. We saved, or reduced the hand labor on thread guide cleaning by 75 percent; and what is commonly known as back guide—the roller beam and bevel screws—by 50 percent; and base rail and spindle rail by 50 percent; and wiping of roving or the creels by 50 percent.

Q. Would you take each of those parts of the spinning frame to which you have just referred and indicate the (tr. 136) frequency with which they were hand cleaned under the Hodge type cleaner, and the frequency with which they are now cleaned with the Holtzclaw equipment? A. On the thread guide, we were cleaning four times a shift. And the back guide, the roll beam and screws, twice a shift. Spindle and base rails, twice a shift. And creels, twice a week.

Reduced it from four times per eight-hour shift on the thread guides to one. And the others were reduced from two to one, depending on whether it was a shift cleaning or a weekly cleaning estimate.

Q. With the Hodge type equipment, would you find it necessary to blow off underneath the underframe area by compressed air or some other air device? A. Yes. In our case we did blow off idlers, pulleys and spindle rails on shutdown at the weekend.

Q. How often was that done? A. Shutdowns were on Saturday. Weekends.

Q. During each week? A. Once a week, yes.

Q. What has been your experience, as far as the necessity of that operation, with the newer type, or Holtzclaw equipment? A. We don't blow the idlers off at all any

more, except in an overhaul cycle, which is normally every three months.

(tr. 137) Q. Is it necessary to stop the operation of a spinning frame in order to blow off the underframe area with compressed air? A. We do. In some cases they may not stop it, but we have always stopped it to keep from blowing lint into the yarn.

Q. Will you state what portions of the spinning frame, if any, are not cleaned by the Hodge-type equipment? A. Well, the Hodge type, we didn't do any cleaning below the roll beam level. Underframe we didn't clean under that with the Hodge-type cleaner.

Q. And what components of the spinning frame are there beneath—Did you say the roll beam area? A. Yes sir.

Q. Which would have to be cleaned? A. Your weights and idlers and tapes and tension pulleys. And your spindle rail and base rail and rockers.

* * *

(tr. 141) RE-DIRECT EXAMINATION
BY MR. GRIER:

* * *

(tr. 142) Q. But there was less lint accumulation underneath the top creel board where the air was blown directly on it? (Reference was to Plaintiff's Exhibit 15) A. That's right.

Q. And that would have the effect of preventing the lint from getting into the work? A. Yes sir.

Q. And would result in a better product . . . A. Yes.

Q. . . . as the result of having the air blown directly on (tr. 143) those areas? A. Yes.

Q. And you say that underneath the middle creel board, where the air was not directly blown, that lint did continue to accumulate? A. Yes.

* * *

(tr. 145) S. M. CAUBLE,
called as a witness by and on behalf of the Plaintiff, being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION BY MR. GRIER:

* * *

Q. With what company are you employed? A. Acme Spinning Company.

Q. In what capacity? A. As general superintendent.

Q. How long have you been experienced in mill operations? A. As a superintendent, my twenty-second year.

Q. And you have charge of one or more of the mills of Acme Spinning? A. Two plants: One and Two.

Q. Are you familiar with the traveling cleaner equipment which we have referred to in the evidence here as the (tr. 146) Hodge type, and as illustrated by Plaintiff's Exhibit 1? A. Yes, we have some of those.

Q. You have some of those in your mills? A. Yes sir.

Q. Will you state what parts, if any, of the spinning frame were not adequately cleaned by the use of this equipment? A. Well, there wasn't any, you might say, scarcely any cleaning done underneath the what we call the roller

beam or underneath the frame. Of course, there are different frames; some are wider than others. You may have a large package or you may have a small package.

Q. You are referring to the width of the creel board? A. To the creel board. And where you have a large package, you couldn't get enough air underneath the top creel board or the middle creel board to keep the lint off of the roving there, and just occasionally—we didn't have any set date—we tried to get it done every three weeks—while the girls would take what is known to us as a little finger brush so big in diameter and so long, and they would clean that cotton back underneath there that the . . . .

Q. Back underneath where? A. The top of the creel board and the middle creel board. They would clean that off by hand, or with a brush, in other words. And of course, (tr. 147) underneath the roller beam where the tape tension pulleys and your weights and your weights that work on the tape tension pulleys, it didn't clean them at all; so we had to stop the frames off and blow them off with compressed air once each week.

Q. Did you recognize that the cleaning equipment of this Hodge type as indicated on Plaintiff's Exhibit 1 did not do adequate, fully automatic, job of cleaning? A. Oh, yes. I think we all recognize that.

* * *

Q. Have you more recently had some experience with the equipment illustrated in Plaintiff's Exhibit 14? A. Mr. Grier, we only have one of those units, but we have bought the remainder of them for the entire job, for the No. 2 plant, and we are going to buy them for the No. 1 plant; and on the strength of this one, we have bought the

remainder of them for the entire mill.

Q. What experience have you had with this one that is in operation, insofar as its effect on the cleaning procedure? A. Well, where we cleaned our roving creels once each week—the girl had to wipe them, as we call it, with a piece of cotton—we had this one particular run running since a week before Christmas, and we haven't cleaned it whatsoever so far. The only cleaning we have done on that frame (tr. 148) since a week before Christmas has been the thread boards, and where we did clean them twice, or every two hours in other words, we clean them once each eight hours; and other than that, we have done no cleaning, except the rockers. We have cleaned them, understand; but so far as the base rail, the ring rail, the guide bars or the guides themselves, or the roving, we haven't cleaned them, because we are trying to see how long we can go before we set up our schedule, our cleaning schedule. Of course, we know about what to set our schedule upon, but so far we haven't even cleaned those particular sides at all.

Q. What does the use of this equipment, as compared with the old Hodge type cleaner as indicated in Plaintiff's Exhibit 1, what effect does it have on the quality of the production you can expect from your mill? A. By keeping it blown off without it collecting on there, that is really the object of all the companies who make this cleaning equipment, is not to let it get in there and blow it off, but it's to keep it blown off at all times. So, when the lint would catch on the roving and then go through your drafting system, then you would have what we call a slub or a heavy place in your yarn, which would make an inferior product.

Q. That answers my question in respect to the quality of your production. State whether or not it enables you to

(tr. 149) keep your machines in operation a larger percentage of the time. A. Yes. We would stop off the frames once a week and blow them off. But you couldn't just stop one frame, because wh you would blow this frame off, it would blow over on the other frame; so instead of stopping just one frame, you would have to stop at least three frames; because either side of the frame would get cotton into the other work and cause bad work there; so we had to stop it off to keep it from going through while we were blowing it off. And should you attempt to blow a frame off and it running, you would tear the entire frame, the ends, all down.

Q. By the "ends", you mean the roving? A. Yes, or your yarn down, yes. When this air goes in here, you would tear all these ends down here, because with compressed air going in there with the frame running.

Q. Why could not the amount of air blown out of these stationary and rigid outlets on the Hodge-type cleaner simply have been increased? A. Well, had you increased the air enough to keep that blown off—it couldn't get underneath it, because there was no way to put it under there—but had you blown it enough to get it in there, you would blow that roving in two, being of a tender nature, it would put just enough twist in the roving. In other words, the (tr. 150) less twist you can put into that roving, the better yarn you make, because it will draft out so much better; therefore, we just put enough twist on the roving to hold it together to pull it off of that bobbin into the drafting system to have it spun on the spinning bobbin.

Q. Have you ever had any experience in undertaking to increase the amount of air volume from one of these Hodge cleaners? A. Well, we did try it, but we found

it was not successful, because in some instances we blew the roving partially in two and some of it in two. Where you blow the roving partially in two, you don't have a heavy place in your yarn, but you have a thin place in your yarn.

Q. So the roving is of such a delicate nature that if you blow too hard on it, it will thin out your product? A. That's right. In fact, your yarn is no better than your roving, because if it goes in thin, your yarn comes out thin; if it goes in heavy, it comes out heavy. And the drafting system will draft it out, it's true, but you still have the heavy place there or the thin place there.

* * *

(tr. 151) Q. Based on the experience you have had with the installations you already have in your mill, do you have any idea how long it would take it to pay for itself in labor savings? A. Well, when you want to spend your boss's money, you always have to have something to tell him, whether it's exactly accurate or not, and naturally we tried to tell him and honestly so that we believe it would certainly pay for itself in production and quality within two to three years. And we figure if you can pay for your capital investment in a cotton mill in three to five years it's a good investment.

* * *

(tr. 162) E. FORREST KULP,
called as a witness by and on behalf of the Defendant, being first duly sworn, was examined and testified as follows:

* * *

(tr. 183) CROSS EXAMINATION BY MR. GRIER:

Q. Mr. Kulp, you have been employed by the American Monorail Company since about 1945? A. That's right.

Q. Are you familiar with the fact that the Holtzclaw flexible cuff patent was applied for in December, 1947? A. Yes, I think that's right.

Q. In 1949 your company had not brought out its Tri-rail cleaner? I believe you say it brought it out about 1951? A. That's right.

Q. In 1949 you were selling the old Lawrence-type cleaner that we have here in Plaintiff's Exhibit 3, indicated by this sort of mechanism? A. That's right.

Q. And you advertised that as able to clean the upper portions of the frame? A. That's right.

Q. And in addition to that, you were recommending to the customers that they buy for underframe cleaners this (tr. 184) special underframe cleaner, such as you have testified about? A. That's right.

Q. How many frames would each of those underframe cleaners serve? A. One, in most cases.

Q. So that you had to buy one of those for each one of the frames that you wanted to clean? A. That's right.

Q. What would an installation of it cost, approximately, per frame? A. Now? Or then?

Q. Then. A. They first started selling them for $265.00.

Q. A frame? A. A frame.

Q. And in addition to that, you had to buy the Lawrence-type equipment to ride on the track underneath the frame?

A. Above the frame, yes sir.

Q. What did that cost per frame? A. That was around $1.00 or $1.25 a spindle, Mr. Grier.

Q. And there are about 300 spindles to a frame? A. It varies from 200 to 260, I believe.

Q. Would $300.00 be a round figure? A. It would be tops.

(tr. 185) Q. How much did you say the underframe cost? A. $265.00.

Q. So about $565.00 for both of them? A. That's right.

Q. Do you agree in the statement that was made in application for your underframe cleaner patent to the effect that . . .

MR. WATTS: I object to this, your Honor. It has not been shown that this witness knows anything about the patent.

MR. GRIER: I am going to see whether he agrees with it, your Honor.

THE COURT: Let him ask the question, and then I will rule on it.

Q. (By Mr. Grier) The statement appears in the Miller-Becker patent for the underframe cleaner No. 2,516,475 (Plaintiff's Exhibit No. 8) in column 1, beginning with line 37: (Reading)

> "Air streams could theoretically be used to effect the desired cleaning but the problem of generating such streams and delivering them against all the parts in

the underframe to be cleaned has apparently been insoluble. A continuous strong blast of air is far too expensive to use in this way, the quantity of air and the pressure required being enormous because of the dimensions of the ordinary spinning machine. A travel-
(tr. 186) ing air stream could not be applied effectively from outside the frame and severe space limitations within the frame made any known traveling air stream generating and/or directing means entirely impracticable."

In 1949, when you were offering your underframe cleaner and this Lawrence cleaner type, would you have agreed with this statement that the idea of applying streams of air from the outside to clean the underframe area was impracticable? A. I still do.

Q. If you still do, let me ask you this: Did you undertake to sell your underframe cleaner in combination with your Tri-rail cleaner to the Burlington Mills back in the fall of 1954? A. Yes, we did.

Q. Did you set up for a demonstration of your Tri-rail cleaner, in combination with this underframe cleaner, for them to test? A. That's right, we did.

Q. And at the same time, they tested the Parks-Cramer cleaner similar to that indicated in Plaintiff's Exhibit 14? A. Can I see Exhibit 14?

Q. Yes.

THE COURT: That is the patent?

MR. GRIER: Yes.

(tr. 187) A. Yes.

Q. And after the mill had tested both of them, they indicated to you that they were going to buy the Parks-Cramer equipment? A. That's right.

Q. And at that time you said you believed you could make a flexible sleeve that would clean the underframe? A. That was before they made their decision, yes.

Q. And you asked them to give you some more time? A. That's right.

Q. And then it was you sent to Cleveland and got those flexible cuffs over there and installed them on your tri-rail cleaner and ran a test with them? A. That's right.

Q. And that is the first time the American Monorail Company had ever had extended flexible cuffs? A. That's right.

Q. And that was December of 1954? A. I can't swear as to the date. It was about that time, yes.

* * *

(tr. 188) Q. And when you mount your tri-rail cleaner over the standard type frame, you shorten those extensions? A. That's right.

Q. And the purpose in those cases is to keep them above head height? A. That's right.

Q. (Continuing)—They being a metal outlet that would do damage if it would come in contact with someone? A. Yes.

* * *

(tr. 189) Q. After you set up this experimental model here in the Burlington Mills as you described, you ran tests and Parks-Cramer still got the business? A. Yes sir.

Q. And after that your company got out what they called their commercial version of the flexible cuffs? A. Yes sir.

Q. And since that time, they have been offering it for sale to the various mills? A. Yes.

Q. And have sold and installed it in a number of places? A. That's right.

Q. And that equipment, as installed, consisted of a trackway? A. Yes.

(tr. 190) Q. And a fan? A. Yes.

Q. And a motor for propelling the fan and the carriage along the track, or motors? A. Yes sir.

Q. And housing for the fans? A. Right.

Q. And conduits for air outlets terminating above head height, being rigid? A. Right.

Q. And flexible cuffs that have been added for cleaning lower areas on the frame? A. That's right.

* * *

(tr. 193) ROBERT C. SESSIONS,
called as a witness by and on behalf of the Defendant, being first duly sworn, was examined and testified as follows:

* * *

(tr. 264) CROSS EXAMINATION BY MR. GRIER:

Q. Are you regularly employed by the American Monorail Company? A. No.

Q. You were employed by them for the purpose of this suit? A. Yes, that's right.

* * *

Q. What experience have you had prior to the preparation for the trial of this suit in textile cleaning industry? A. My experience has not been directly in the textile cleaning industry. I have had experience in the use of blowers and mechanisms relating to cleaning generally, but not the textile industry.

Q. In other words, you have not had any experience with these traveling cleaners which you have described prior to your preparation for this suit? A. Not specifically, but (tr. 265) I have had experience with mechanisms involving the same problems.

* * *

Q. What experience have you had in the textile industry other than in connection with the preparation for this suit? A. I have been in textile mills, and I have had some familiarity with the use and manufacture of automobile tire cords, but generally speaking, I have not been closely connected with the textile industry.

Q. You have never worked on or around a spinning frame? A. No.

Q. And I take it that prior to your preparations for this suit, you had never seen a Walker type cleaner? A. That's right.

Q. Or a Hodge cleaner? A. Not that I recollect. No, I had not noticed them particularly.

Q. Have you ever, prior to your preparation for this suit, seen a spinning frame in operation? A. Yes.

Q. How long ago? A. Oh, I can't remember. I think it was quite a long time ago.

(tr. 266) Q. Well, about when? A. Before I started working on this suit.

Q. About how long a time would you say? A. It might have been 15 years ago or more.

Q. And you have not seen a spinning frame from that time, which you estimate to be about 15 years, until you began preparation for this case? A. No. That's right.

Q. So that your expert knowledge you have testified to is based upon the information you have gathered in preparing to testify in this suit? A. Yes—Well, no. Not entirely, of course.

Q. . . . With the general educational background? A. I think it's based upon my entire engineering experience with mechanisms of a similar nature.

Q. But were not in connection with traveling cleaners for textile mills? A. That's right.

Q. Or with textile machinery? A. That's right.

* * *

(tr. 267) Q. Did you make your own investigation of the earlier patents, the earlier cleaners, or did you take the information that was furnished to you by the American Monorail Company? A. I took the information furnished me by the American Monorail Company and Mr. Watts.

* * *

(tr. 296) Q. (Referring to the patent in suit) Back in column 2 at the second object, line 19 "is to provide a highly flexible nozzle or nozzles particularly that for transmitting the current of air transversely across the machine which

will yield upon impingement with an obstruction in the path (tr. 297) thereof such as the presence of an operator in the aisle between adjacent groups of machines thereby preventing injury to the operator." And there is nothing in that language that would limit the flexible cuff to the position so as to clean underneath the creel board, is there? A. No.

Q. Going to column 4 at the top of the page, I will ask you if he had not gone to some length to point out to one reading this patent that the "embodiment of the invention shown and described herein is of an illustrative character and not restrictive and that various changes in form, construction and arrangement of parts may be made within the spirit and scope of the following claims." Do you find that? A. Yes.

Q. I will ask you if in Claim 6, which is the claim in suit, you find any language that would restrict the application of that claim against cleaning any part of the spinning frame or other textile machine which might be desired to be cleaned? A. I think that . . . Yes, I do find language in that claim that so restricts.

Q. Point that out, then. A. The claim, considered in the light of the specification . . .

(tr. 298) Q. Well, now, let's take . . . A. (Continuing) . . . in the drawings . . .

Q. (Continuing) . . . It in the light of the illustration given in the specifications. Let's take this Claim 6 on its face and consider it in the light of what it says. And then you can take the specifications and read them in if you want to. A. Okay. I cannot answer that question in the light of the words of the claim alone, because the words of a claim are meaningless always unless considered in the light of something else: the specifications, the drawings.

the arguments made during the prosecution of the case, and things of that sort. Other references in these specifications. Now, words alone mean nothing, and I cannot consider Claim 6.

Q. Give me this much then: If you did take the items of Claim 6 and read them, giving to the words found therein their usual English meaning would it not apply to cleaning any part of textile machines? A. I am afraid . . .I don't believe I could understand that claim if I had not seen this specification or some other specification to which it might have been applied, and I can't divorce the two in my own mind one from the other.

Q. All right. Then you either can't or won't answer.

* * *

(tr. 306) Q. Do you have with you among the copies of patents you testified to this morning the Trautveter patent? A. Yes.

* * *

(tr. 307) Q. Refer, Mr. Witness, to the copy of that patent, column 1, line 50. That's one of the prior patents. I believe it was a Hopper conduit for cleaning rail cars, and it is one in which you said there was a flexible material indicated; and I will ask you to read from line 50, column 1, the way in which they described the material they used for their outlet. A. (Reading): ". . . may be of rubber suitably reinforced by fabric vulcanized thereto and readily detachably . . ."

Q. Now, look at the Lintern patent for a fanning device. Look at column 2, line 22, and read me how they describe

that. A. Yes. It says, "an imperforate resilient rubber tube . . ."

Q. Look at Robinson's patent, line 80. I don't believe they numbered the columns separately on that one. Look at line 80 and see how they describe the flexible material in that fanning device. A. It says, "The nozzle 8 is formed from a flexible body, preferably rubber, ..."

Q. All right. Now, don't you think, reading the descriptions of flexible material in those three patents that the (tr. 308) Holtzclaw patent, when it describes it as being "suitably woven fabric which desirably is impregnated with suitable material to make it impervious to the blast of air passing therethrough" describes the thing in about as much detail as these three other patents you have cited? A. I think it probably did, yes.

* * *

Q. Now, the Trautvetter patent had to do with a hopper conduit for rail cars, and they didn't pass any air through that tube, did they? It wasn't an air tube? A. Just a minute. No.

Q. It was not for cleaning? A. No.

Q. And it had nothing to do with textile machines? A. No.

Q. Lintern's was a sanding device for vehicles, and it passed sand rather than air through its tubes? A. Yes.

Q. And it didn't clean? A. That's right.

Q. And it had nothing to do with textiles? A. That's right.

Q. And Robinson was another sanding device, and it

(tr. 309) didn't pass any air through the tubes? A. That's right.

Q. And it didn't do any cleaning? A. That is correct.

Q. And it had nothing to do with textiles? A. Right.

* * *

(tr. 312) LLOYD R. McEACHERN,
called as a witness by and on behalf of the Defendant, being first duly sworn, was examined and testified as follows:

* * *

(tr. 322) CROSS EXAMINATION BY MR. GRIER:

Q. Mr. McEachern, you say you have been with the American Monorail Company for about six years? A. I believe it was 1948 when I came with them, yes. I may be wrong.

* * *

(tr. 323) Q. And you have been representing the American Monorail Company in South Carolina ever since that time? A. That's right.

Q. And at that time they were engaged in the sale of traveling cleaners? A. Yes sir.

Q. I will ask you if at that time American Monorail Company was not selling the Lawrence-type cleaners for that purpose? A. I am not familiar with what the Lawrence-type cleaner was.

THE COURT: What is the number of that exhibit?

MR. GRIER: Exhibit 3, I believe, Judge.

THE COURT: Do you have it there?

MR. GRIER: Yes sir.

THE WITNESS: That is correct, yes sir. We were selling them.

Q. And the Parks-Cramer Company was selling the Hodge-type cleaner that was identified as Exhibit 1? A. Yes sir.

Q. And this tri-rail cleaner that has been referred to (tr. 324) in some of the testimony and in yours, was not put on the market by Monorail until 1951, some three years after you came with the company? A. That is approximately correct, yes sir.

* * *

Q. Up until 1954, the Monorail Company did not have any flexible sleeve cleaners similar to that indicated as Defendant's Exhibit F here in the courtroom, did it? * * * A. Not to my knowledge.

Q. And in 1954 or 1955, after the Parks-Cramer Company had come out with this model you have identified as being the "Elephant" trunk type, then the Monorail Company got up this Exhibit F and came out with it? A. I am not sure about the sequence of those events. They had the "octopus", I am sure, but I don't know about the timing of the "Elephant" trunk.

Q. In any event, Parks-Cramer had been selling its (tr. 325) flexible cuff cleaners prior to the time Monorail came out with its flexible cuff cleaner?

* * *

THE WITNESS: I believe it did, yes sir.

THE COURT: All right.

Q. So that at the time when you came out with this Exhibit F, you were recommending to the trade the use of underframe cleaner of the Miller and Becker type in combination with the tri-rail cleaner? A. That is correct.

* * *

(tr. 326) Q. Why do you think your company came out with this flexible cuff cleaner? A. It was a matter of economics mostly, because of the cost and expense of the mono-cleaner unit, and we were offering a second or third best item here to do part of the job that an underframe cleaner would do.

Q. In other words, you could afford to put on the market a flexible cuff cleaner similar to Exhibit F at less cost to the customer than what your combination of the two units cost? A. That is correct.

* * *

Q. I will ask you if it isn't true that you have not been able to sell your underframe cleaners? A. No. I wouldn't say that was the case at all.

Q. How many of them did you sell in 1955? A. Oh, a rough guess: 50.

Q. 50? A. In my territory.

Q. In the State of South Carolina? A. Yes. The other (tr. 327) two territories did much better than mine.

Q. And you have to have one of the units for each frame? A. That's right.

Q. And one of these units will cover how many frames?

A. 10, 12, 14. Whatever the loop is.

Q. Assuming it will cover 10, then all the underframe cleaners you sold in the whole State of South Carolina in 1955, could have been cleaned by five of these units, these flexible cuff units? A. They would not have been cleaned to the degree that the Monocleaner would have cleaned them. They would have covered that many frames.

Q. I show you Plaintiff's Exhibit 19, on which I read, "New cleaner solves entire cleaning problem." Do you disagree with that? A. Well, that is an advertisement, of course, and you take some of those things with a grain of salt.

Q. You ask the Court to believe that it is not so good that the company was puffing when they said the thing was .... A. What they were saying there in essence, is that it is the best item of its type on the market to do that job, which is true.

Q. But you still recommend the underframe cleaner in (tr. 328) combination with the tri-rail cleaner? A. For the ultimate in the cleaning result I would, yes.

Q. Do you think you might have any success in persuading the company to abandon this flexible cuff cleaner and going back to what it was doing?

MR. WATTS: I object.

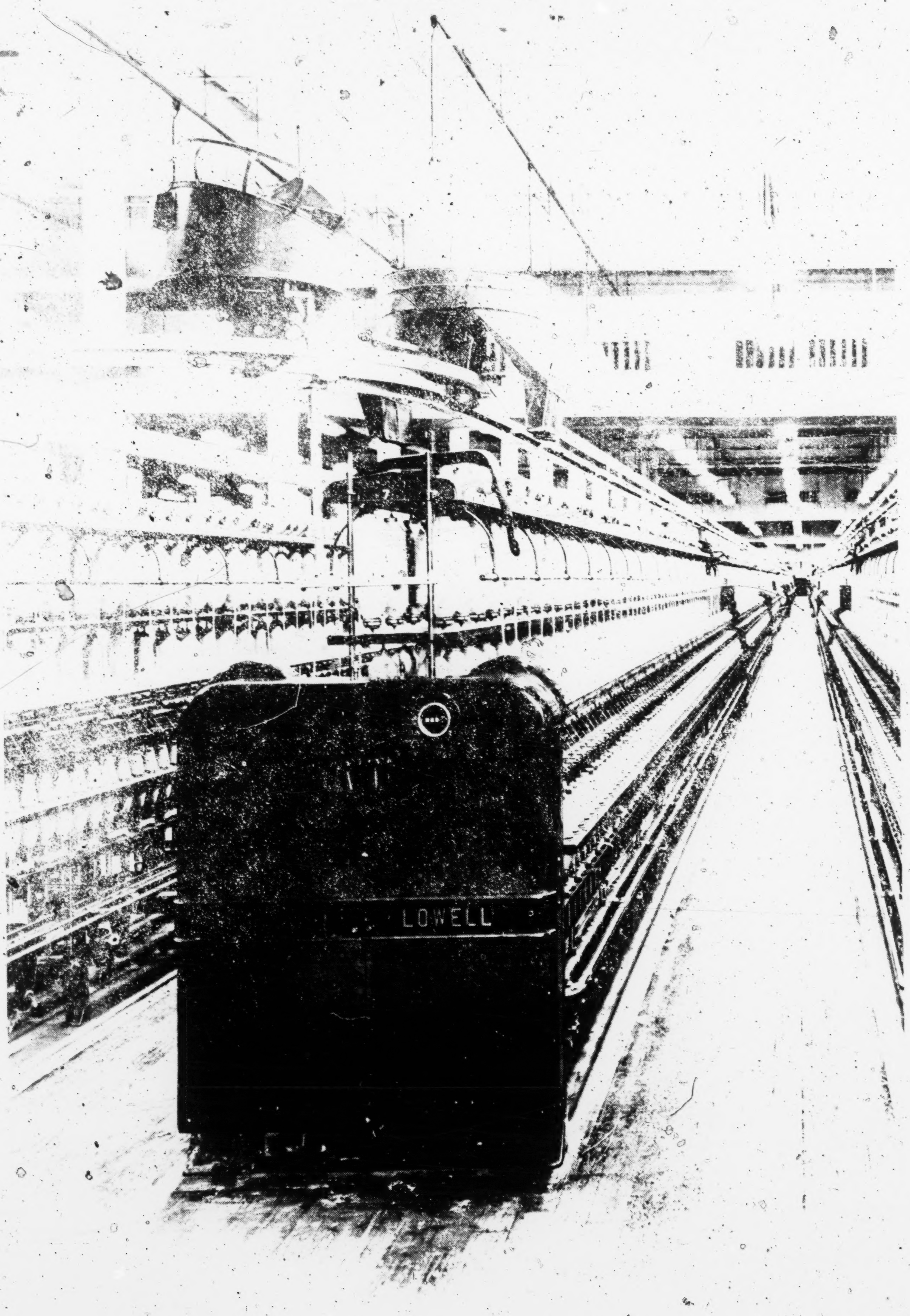
A. I don't know.

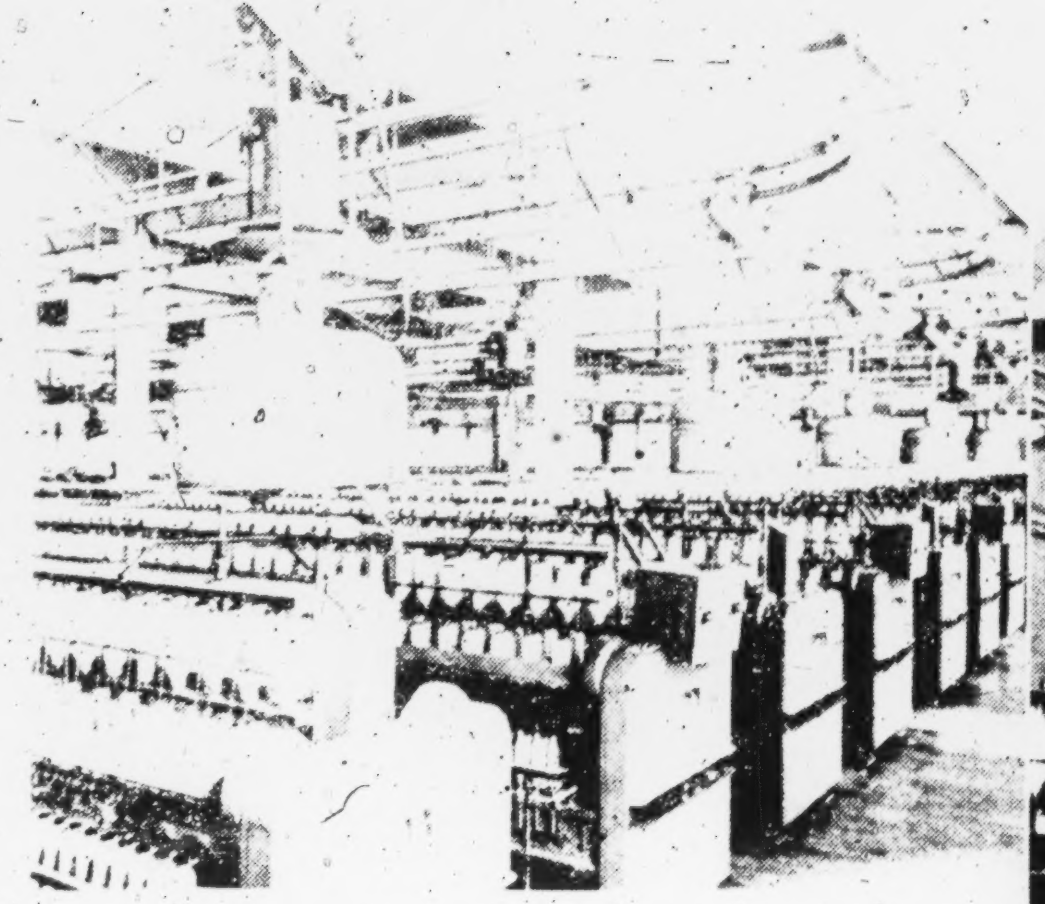
* * *

Plaintiff's Exhibit 1.

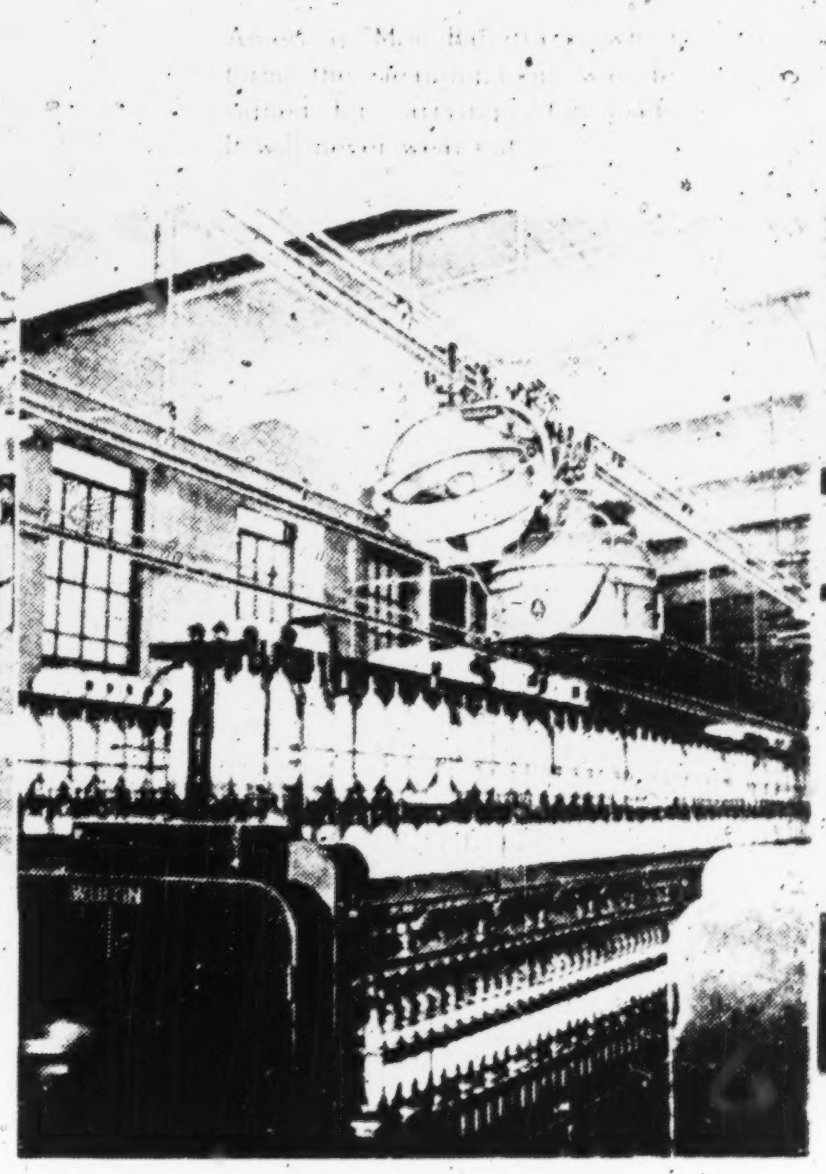
55x

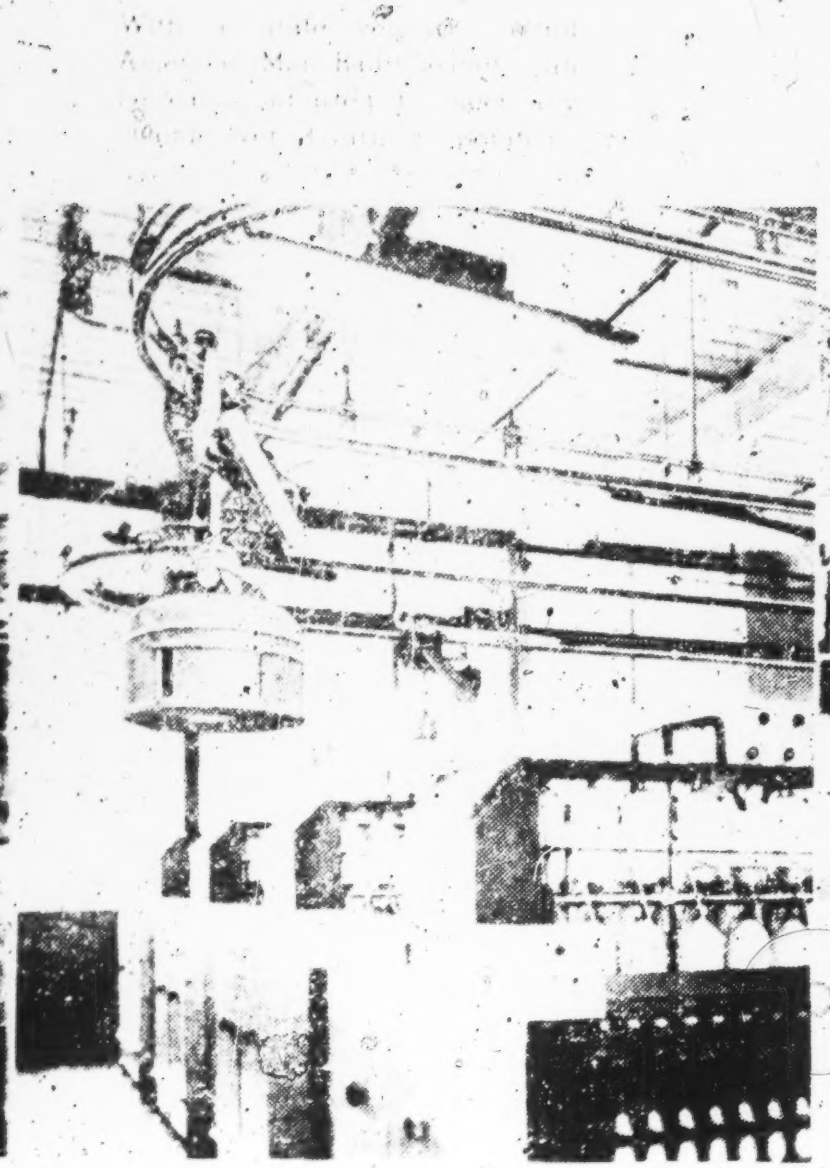
Early Hodge Cleaner

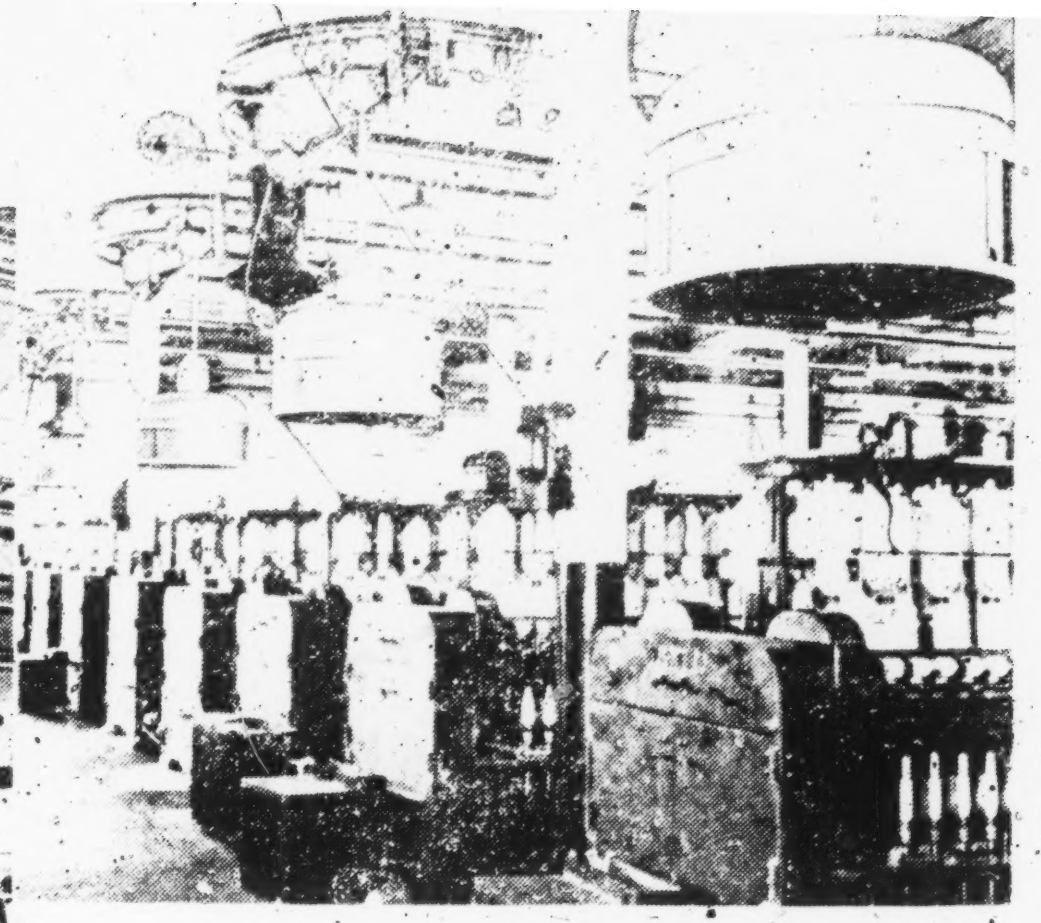




American Mono-Rail Cleaners prevent lint accumulation on drawing equipment as well as spinning frames. They improve appearance and eliminate costly hand cleaning with mop or oil hose.

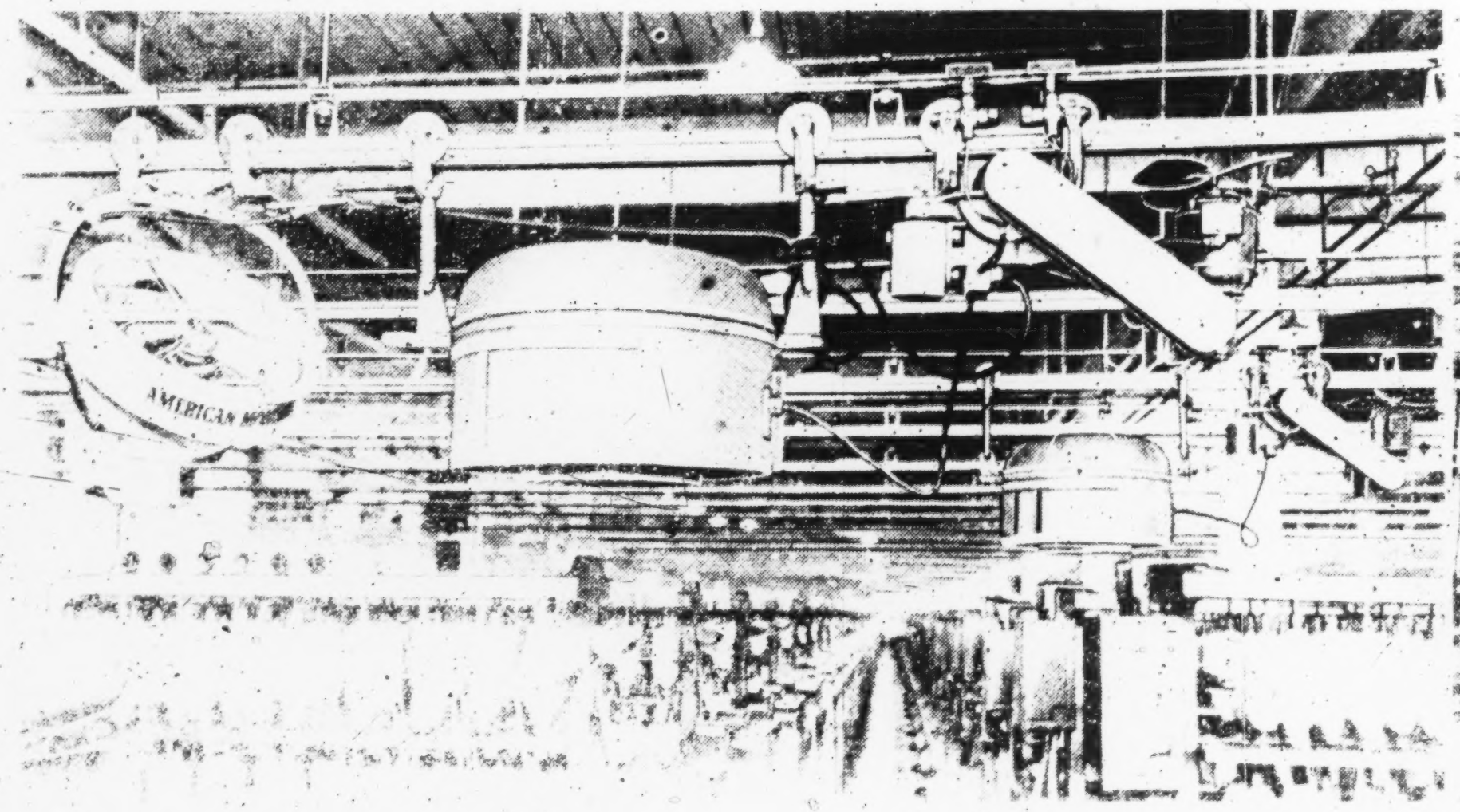


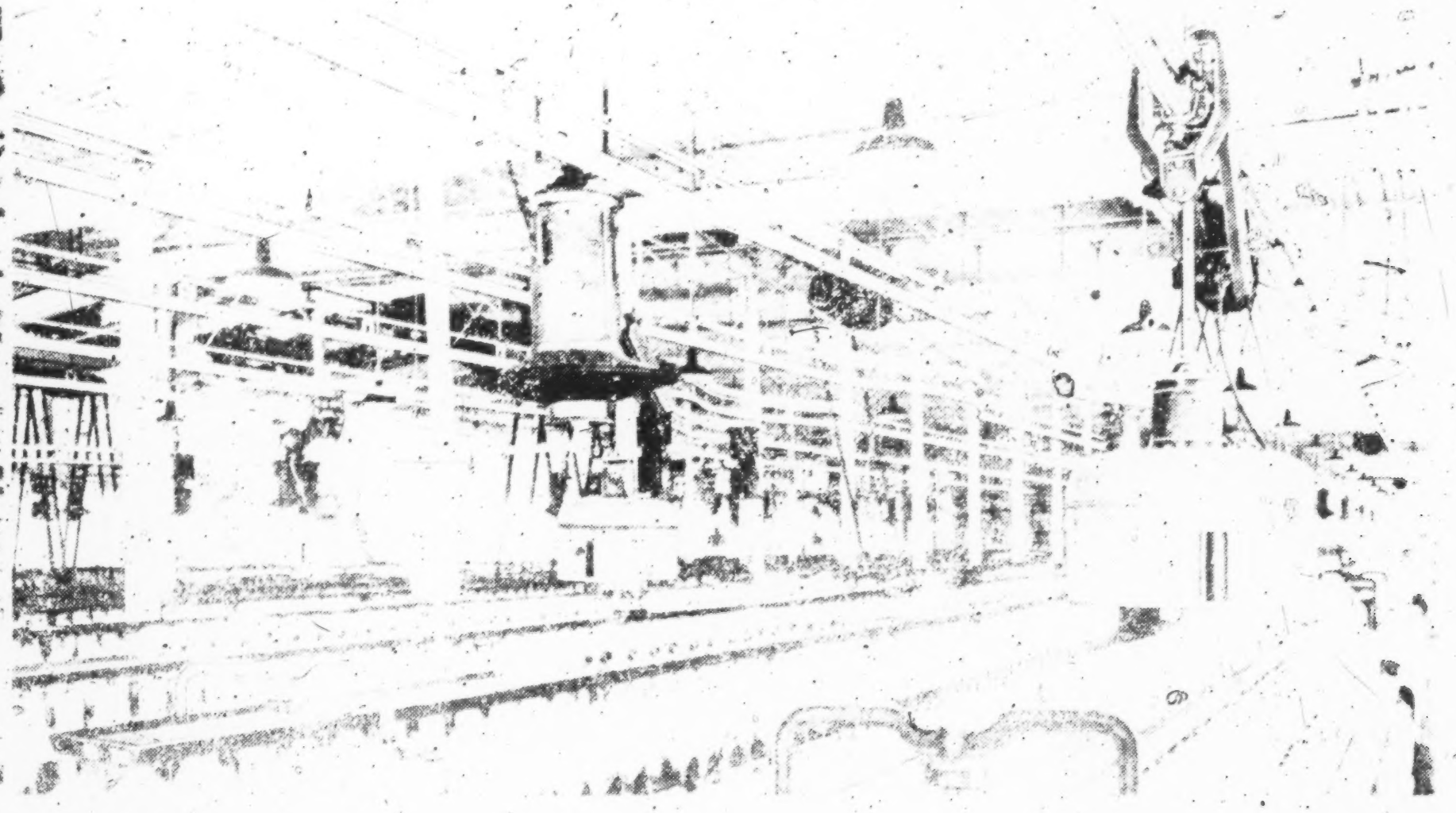




The swirling action of air currents from American Mono-Rail Cleaners prevents condensation of moisture on the rings. It also aids in distributing humidity evenly on the roving and yarn where it does the most good.

CLEANERS OVER SPINNING FRAMES





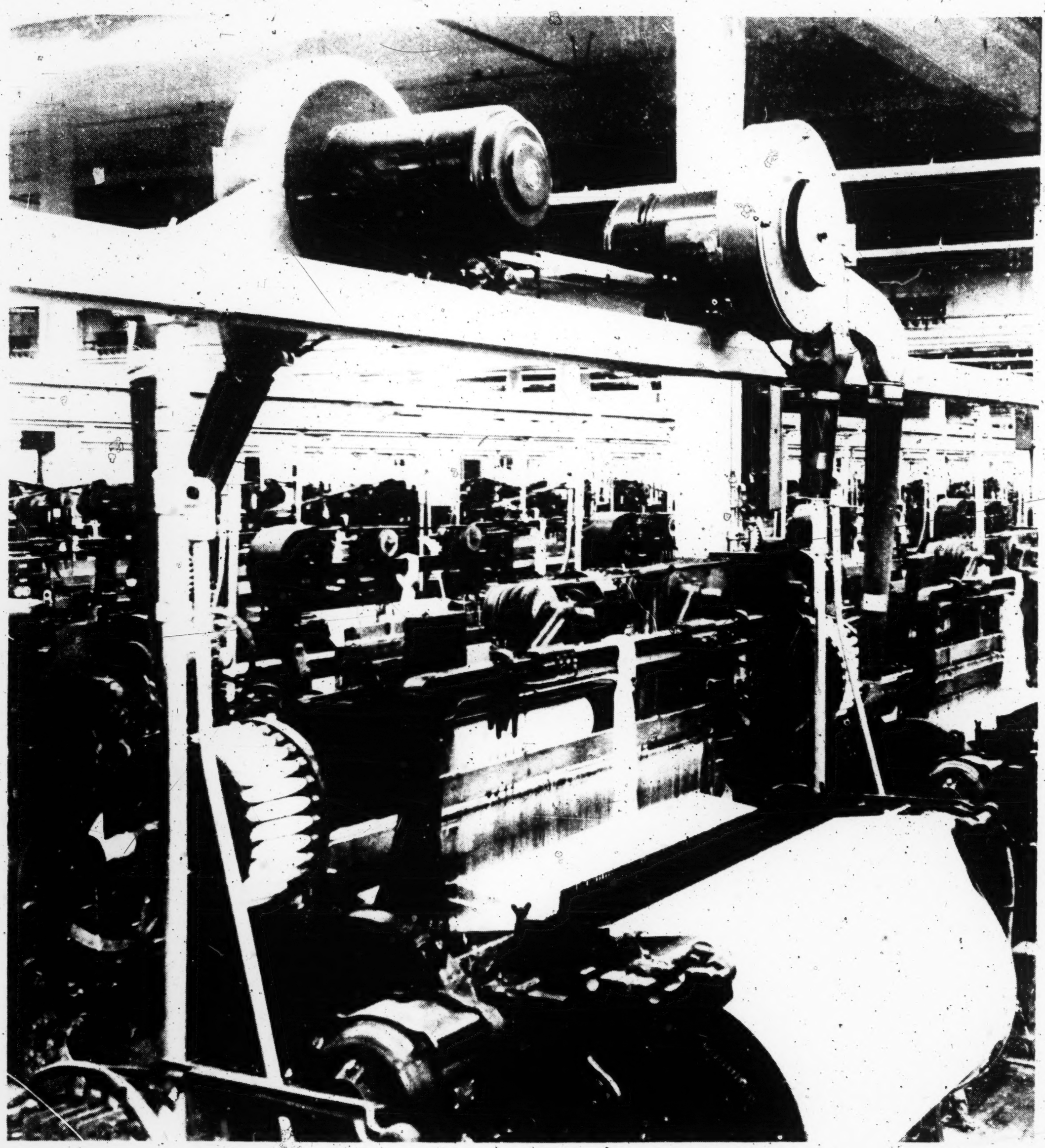
Plaintiff's Exhibit 3.

Lawrence Cleaner

56x

Plaintiff's Exhibit 7. 58x

Loom Cleaner Embodiment of Holtzclaw Cleaner



Plaintiff's Exhibit 8. 59x

Columns 1 and 2 of Miller and Becker Underframe Cleaner Patent 2,516,475 of American MonoRail

Patented July 25, 1950 2,516,475

UNITED STATES PATENT OFFICE

2,516,475

METHOD AND APPARATUS FOR CLEANING SPINNING FRAMES

Carroll de V. Miller, Rocky River, and Francis N. Becker, Cleveland, Ohio, assignors to The American Monorail Company, Cleveland, Ohio, a corporation of Ohio

Application January 10, 1949, Serial No. 70,016

40 Claims. (Cl. 57—56)

1

This invention relates to the art of making thread or yarn from fibres of cotton, wool, plastics including rayon, nylon and mixtures of two or more of such fibres, and is particularly concerned with a new method and new means for preventing the accumulation of short fibres on the spinning frame parts, i. e. cleaning and maintaining clean said parts.

The preparation of fibres for spinning consists generally of cleaning and blanding the fibres and then drawing them out through many operations so that the individual fibres tend to become parallel and to form endless, slightly twisted rope-like strands generally known as roving. This roving is drawn through the drafting rolls of the spinning frames and there is twisted and spun at high velocity. During this twisting and spinning the short broken fibres and any insecurely retained longer fibres, known as "fly" or "lint," tend to be thrown out to float in the air and settle on various parts of the spinning machines, particularly within the underframes thereof. In these places fly accumulations are a serious problem because their removal is expensive and results in a certain substantial amount of fly winding up in the yarn as gouts and slubs which cause weakness, breakage and loss of yarn product, while failure to remove such accumulations involves the hazard of destructive flash fires.

Ever since spinning frames were first used the problem of removing lint from them or preventing its accumulation on them has existed and many proposals have been made to solve this problem. However, none of the proposals has been entirely satisfactory, so far as we know.

Air streams could theoretically be used to effect the desired cleaning but the problem of generating such streams and delivering them against all the parts in the underframe to be cleaned has apparently been insoluble. A continuous strong blast of air is far too expensive to use in this way, the quantity of air and the pressure required being enormous because of the dimensions of the ordinary spinning machine. A traveling air stream could not be applied effectively from outside the frame and severe space limitations within the frame made any known traveling air stream generating and/or directing means entirely impracticable.

One device which was developed during this time to prevent the accumulation of lint on the tops of spinning machines is described and claimed in the Lawrence and Szekeley Patent No. 2,175,608. As is shown in this patent, a blower

2

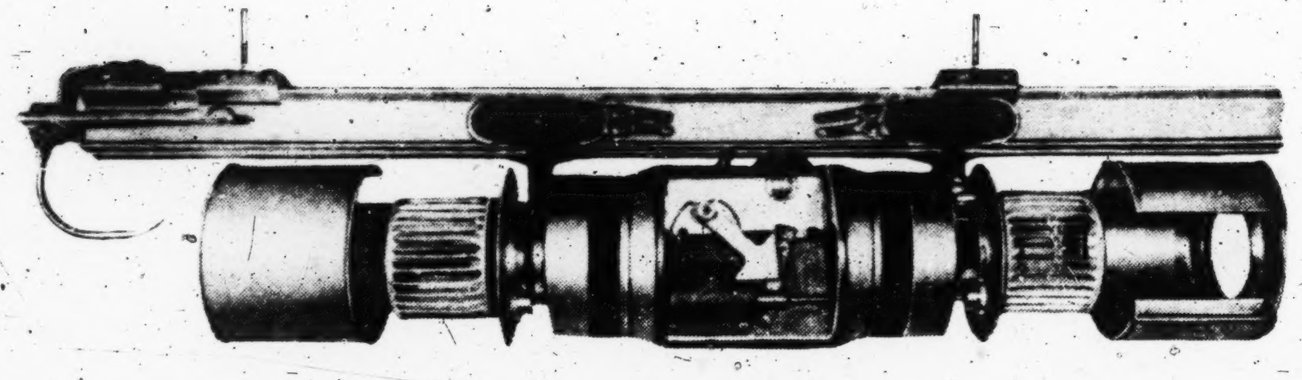
was propelled along a track above a line of spinning machines and air was blown down over those machines in such a way as to blow lint off the tops of the creel boards and green boards and on down toward the floor where it was permitted to accumulate for periodical collection. While this apparatus was a great improvement over some of the prior cleaning devices, it was not particularly effective in preventing the accumulation of lint within the underframe and on parts of the spinning machine located there.

Attempts have been made to clean the underframe, but, so far as we are aware, none of these attempts has met with any commercial success. One such attempt is indicated by Hodge Patent No. 2,128,207, wherein a shaft which extends longitudinally of the machine within the underframe and which drives the spinning spindle tapes was provided at intervals therealong with fan blades, the thought being that the rotation of the fan blades would create disturbances in the air within the underframes sufficient to prevent the accumulation of lint on the underframe and its parts. So far as we know, this device was quite ineffective and impractical and has never been put in commercial use.

Another proposal is shown in Linder Patent No. 1,982,997, wherein a manifolds is supplied with air under pressure and this air is allowed to escape through a plurality of nozzles against the spindles. This device never went into commercial use, so far as we are aware.

Despite the many proposals for underframe cleaning, all underframes are now cleaned manually. The frames are shut down and workmen with brooms and brushes and air jets attempt to dislodge the lint from the underframe parts. Much of the lint so dislodged floats about in the air until given an opportunity to come to rest and some of it thus finds its way back to the underframes. This manner of cleaning is expensive in labor and lost production time of the machine and the results are far from satisfactory.

The present invention provides a method and apparatus which are quite effective in keeping the underframe and its parts substantially free from material accumulations of lint, which is accommodated within the limited space confines of the underframe without any substantial alterations in the construction thereof, which can be readily installed in already constructed spinning machines and even more readily incorporated in new machines and which makes it unnecessary to shut down the spinning machine for underframe cleaning. In one of its modifications where the



How The Cleaner Operates

After several years of development and operation in various mills, it was proven that all the inside parts under a spinning frame could be kept free from fluffy lint only by the traveling passage of opposing spirals of air.

The American MonoRail Underframe Cleaner accomplishes this cleaning air action by traveling at 10 feet per minute, back and forth under the greenboard, and above the cylinder tapes, with a centrifugal type fan at each end of the cleaner. These fans operate at 3450 R.P.M. within a scroll housing which builds up the jet like air output while rotating contra-wise with each other at 13.7 R.P.M. to set up the opposing air spirals.

Cleaner Unit

The cylindrical cleaner unit, 5½" in diameter, can operate within 8" from the bottom flange of a samson. It travels automatically on special aluminum track which also acts as conductors for electric current to the two 1 12th H.P. fan motors. Both motors are equipped with thermal overload protectors which will prevent overheating and eliminate burnout.

Electric Power

Current is obtained from the main frame drive motor junction box by means of an insulating transformer which reduces the current to 110 volts, single phase. The transformer also acts as a cut-off switch and completely insulates the underframe cleaner from the main power source, making it "dead to the ground". Current is wired to the track which is a split or double section, the two halves being carried on insulator supports of impact resistant plastic and suspended from the greenboard.

Trolley Wheels

Stainless steel trolley wheels with knurled treads, pick up the current from the track. Additional protection against electrical arcing is furnished by sliding shoes equipped with silver contact tips which operate against the web of the track. Trolley wheels roll on sealed ball bearings which are shielded with felt dust excluders. No lubrication is required.

Mechanical Features

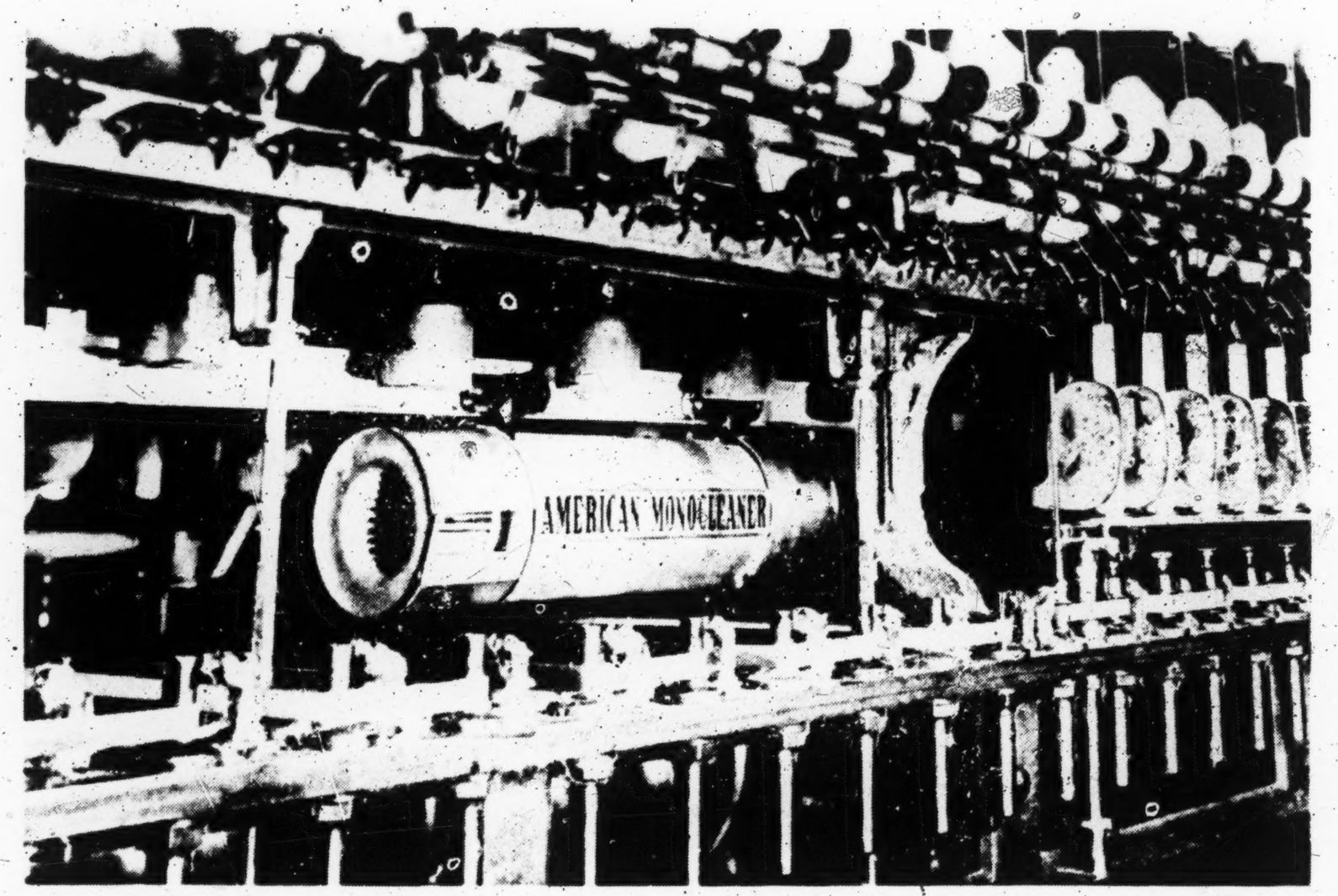
Gearing for propelling the cleaner and for rotating the fan housings is located in a compact, sealed case, operating in a fluid grease. In this same case is contained the mechanism for reversing the travel direction of the unit upon reaching the end of a frame.

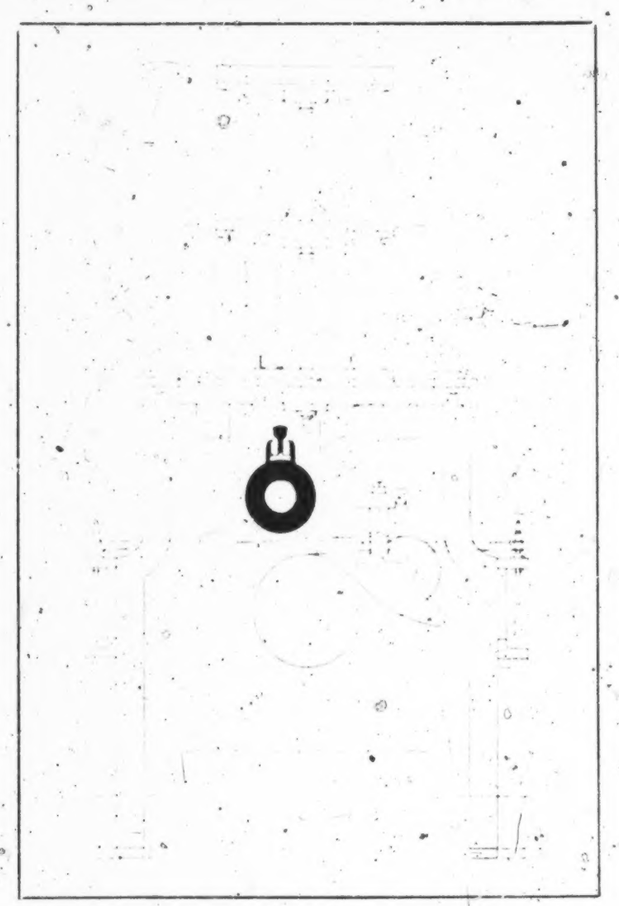
The rubber drive wheel for propelling the cleaner on the track is a miniature MonoTractor similar in principle to those used for traveling American MonoRail standard ceiling cleaners and over-frame cleaners, as well as heavy duty cranes, hoists and automatic dispatch carriers. It consists of a 2½" rubber wheel contacted against the bottom of the track carrying the underframe cleaner unit. Slow rotation of this drive wheel travels the unit back and forth the entire length of the spinning frame. The unit is designed to operate without lubrication and with a minimum of maintenance.

Fan Cleaning Jet

The centrifugal fan blades are kept free from impacted lint by means of an air jet at each end of the track. The unit, upon approaching either end, engages a valve releasing a 2 second blast of compressed air through the jet tube into the fan housing. This keeps the blades thoroughly clean at all times.

IT PAYS TO CLEAN AUTOMATICALLY





Plaintiff's Exhibit 9.

Miller and Becker Underframe Cleaner as shown in American MonoRail Bulletin

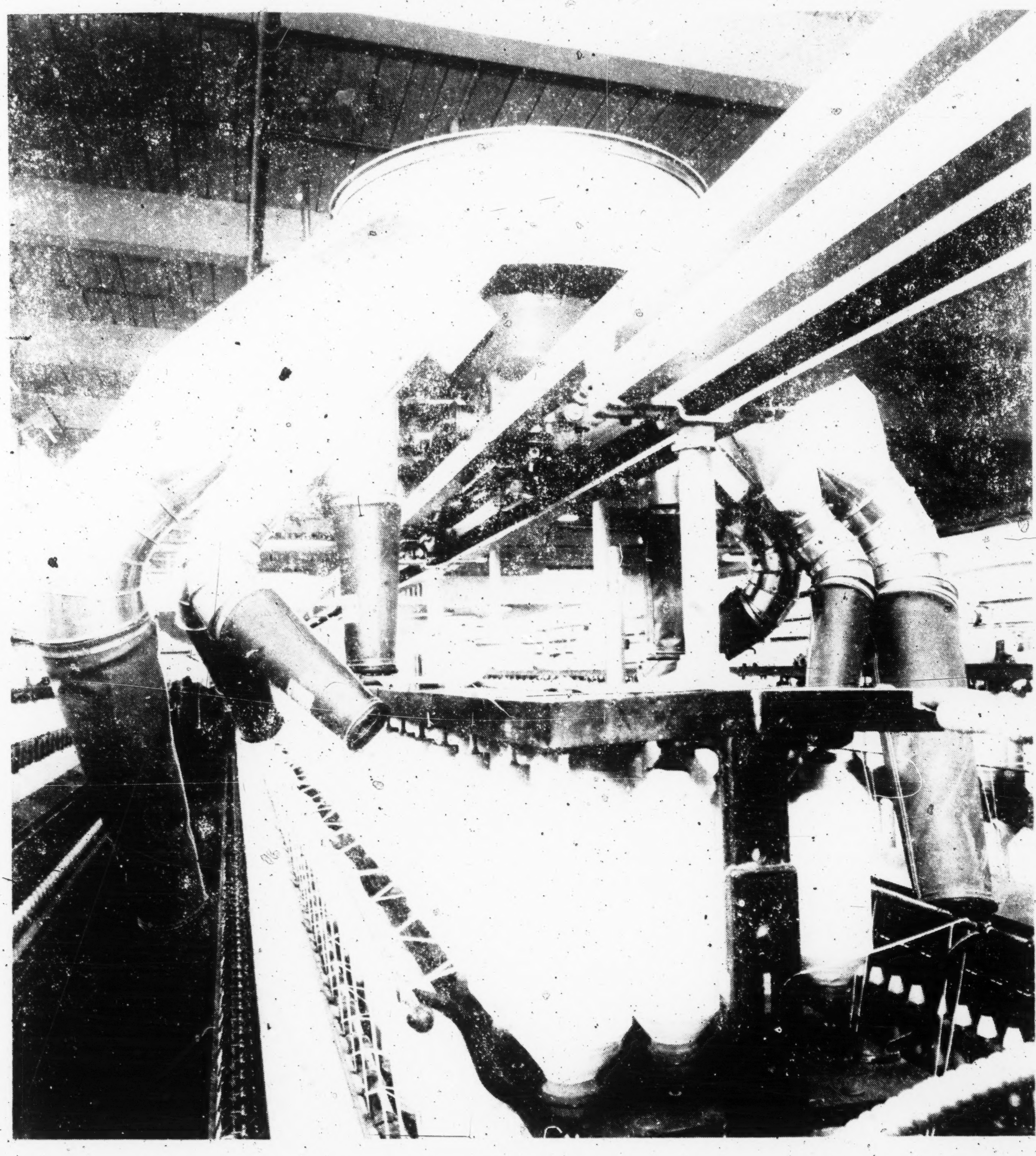
60x

With one section of the ringrail and spindles removed, the above illustration shows the position of the American MonoRail Underframe Cleaner in a spinning frame. The unretouched photo was made after the cleaner had been operating for one month. Note the cleanliness around the weights and other inside parts. The spiralling jets of air prevent any accumulation of fluffy lint around the under parts of the frame. Lint or pieces of yarn adhering to oily surfaces outside the frame cannot be blown into the work but should be wiped periodically. Automatic cleaning blows off all loose lint before it can accumulate thereby saving most of the normal cleaning labor in the spinning room and making it possible to produce cleaner yarn.

Elevation of spinning frame with black outline showing exact location of the American MonoRail Underframe Cleaner.

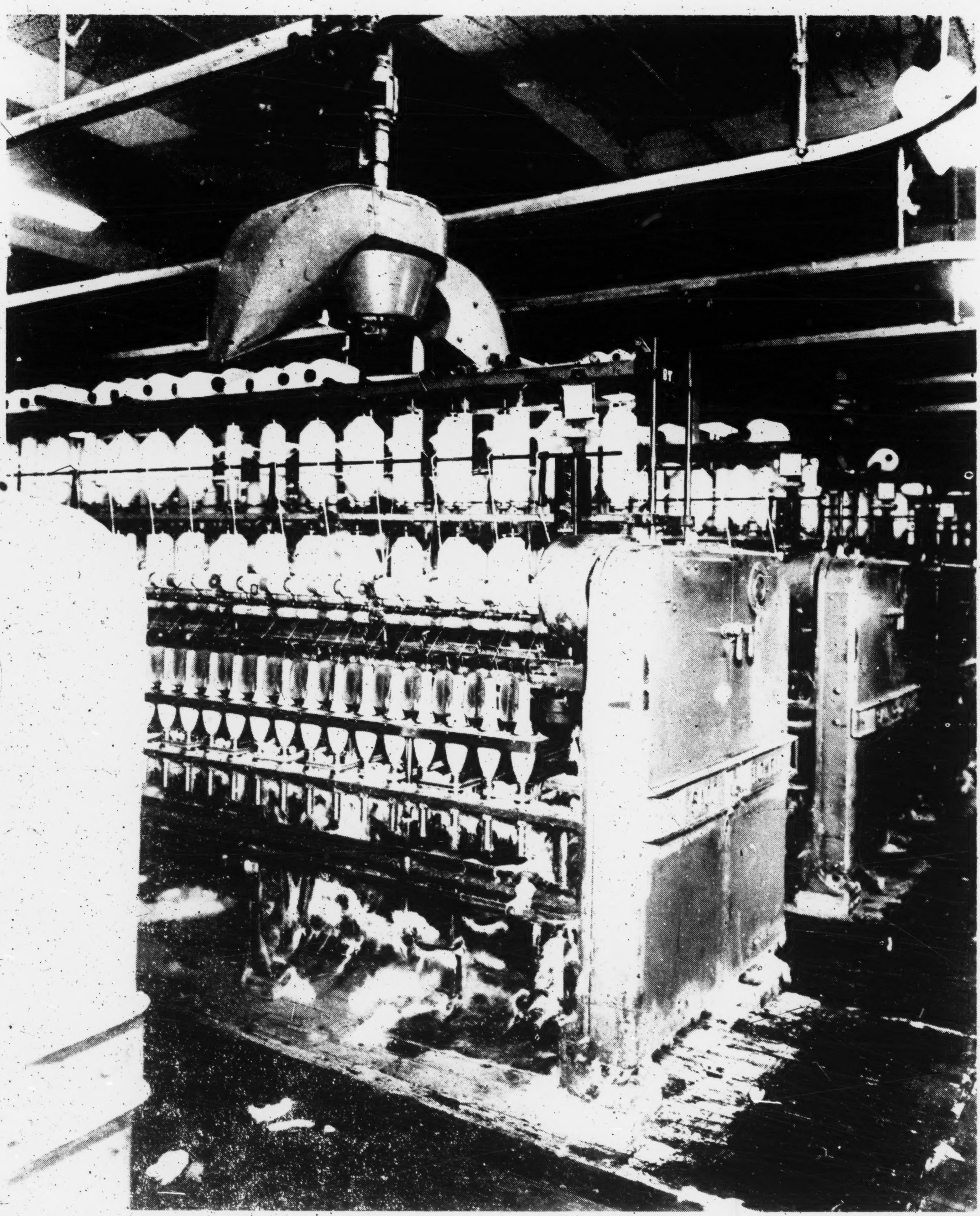
Plaintiff's Exhibit 4. 57x

"Octopus" Enbodiment of Holtzclaw Cleaner



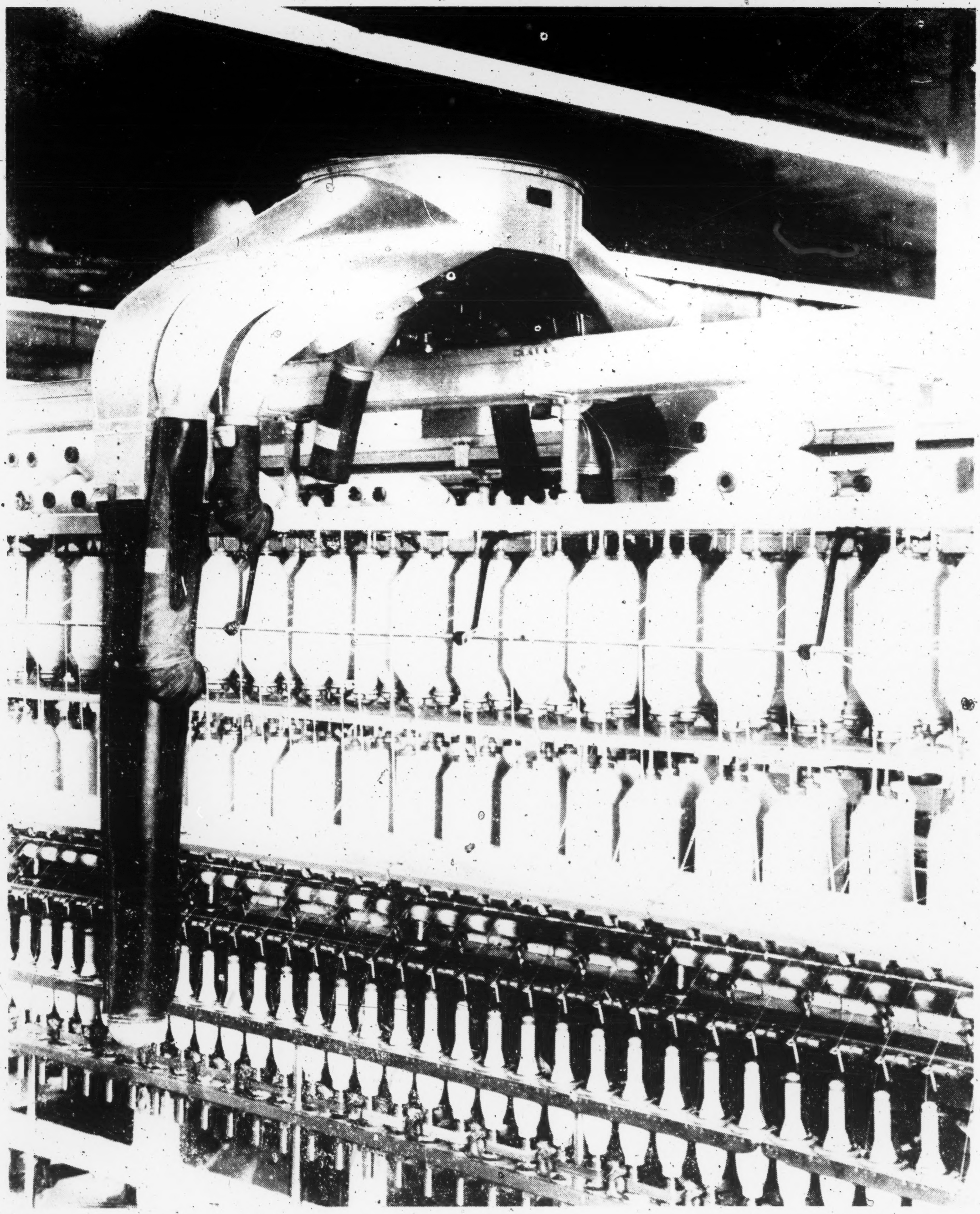
Plaintiff's Exhibit 13. 61x

Walker Type Traveling Cleaner Installed—Showing Dirty Underframe



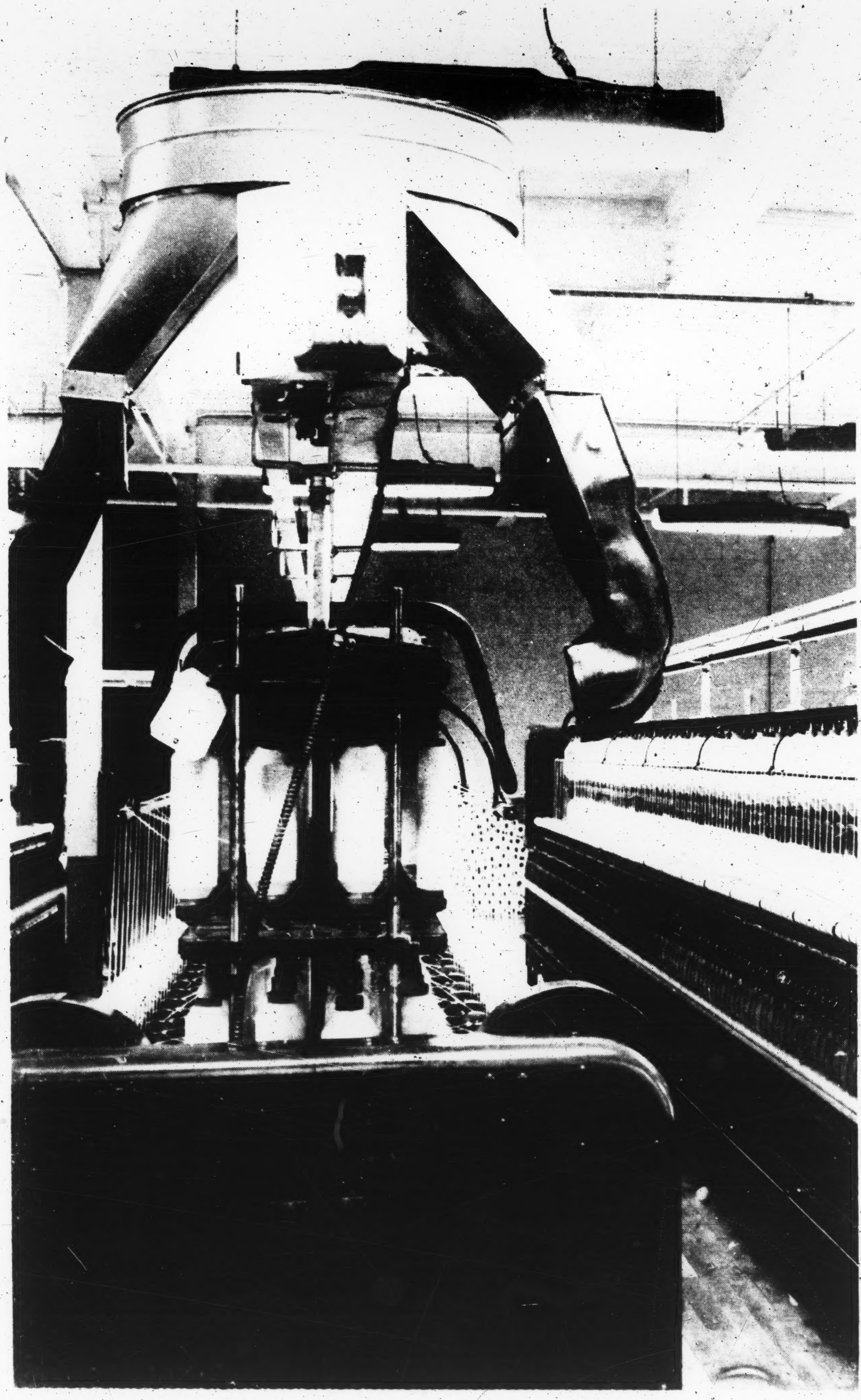
Plaintiff's Exhibit 14. 62x

"Elephant" Embodiment of Holtzclaw Cleaner



Plaintiff's Exhibit 15. 63x

Early Embodiment of Holtzclaw Cleaner for Creel



Plaintiff's Exhibit 16. 64x

"Elephant" Type Holtzclaw Cleaner and Operator